X

PROGRESS REPORT

OF

FOREST ADMINISTRATION

IN

BRITISH BURMA

FOR

1876-77,

By Major W. J. SEATON, M.S.C.,
CONSERVATOR OF FORESTS, TENASSERIM CIRCLE,
AND
Mr. B. RIBBENTROP,
OFFG. ADDITIONAL CONSERVATOR OF FORESTS, PEGU CIRCLE:

WITH A REVIEW BY THE CHIEF COMMISSIONER

AND

ORDERS BY THE GOVERNMENT OF INDIA.

1878.

No. 248F., dated Calcutta, the 26th February 1878.

From—The Officiating Secretary to the Government of India,

To—The Chief Commissioner of British Burma.

I AM directed to acknowledge the receipt of your letter No. 573-135, dated the 8th December last, forwarding the Annual Report of the Forest Department in British Burma for 1876-77, with your review thereon, and to communicate the following observations and orders of the Government of India.

Two reports are submitted,—one on the forests in the Tenasserim Forest Circle by Major Seaton, the Conservator, and the other on those in the Pegu Forest Circle by Mr. B. Ribbentrop, the Officiating Additional Conservator.

2. No great progress has been made in the year under review in the demarcation of additional reserves. Those in Tenasserim were, at the close of the year, still limited to two small tracts in the Yoonzaleen district, aggregating 16·75 square miles. Major Seaton, however, seems to have made good progress in the preliminary work of selecting additional tracts proposed to be reserved; he reports having submitted proposals for the reservation of 47 square miles in the Doomdamee and Attaran districts, and it is gathered from your review that an extension of 170 square miles, chiefly in the Beeling, Yoonzaleen, and Attaran districts, is secured. The outlay on demarcation during the year was Rs. 1,614.

3. In the Pegu Circle the year commenced with an area of 597 and closed with 623 square miles; but the preparations for effecting the demarcation of large additional areas in the Tharawaddie district were well advanced at the close of the year. The outlay on this account was Rs. 6,151.

4. As regards the working and improvement of the forests, it will be convenient to deal with each circle separately. In the Tenasserim Circle efforts were made to extend fire conservancy, but the success was indifferent. It is reported that the Sinzway forest in the Yoonzaleen valley had been protected during seven consecutive years. The effect of this protection, the Conservator states, had been an increase of the dense undergrowth of bamboos, and not an increase of young teak. But Major Seaton acknowledges that the forest had a fresh and green appearance, that the younger teak trees were healthy, and that there was an absence of injury to teak trees by fire. He also describes the commencement of operations intended to make room for young teak to spring up. These are doubtless measures in the right direction, and so is the planting of teak in toungyas, by which means 253 acres are reported to have been stocked in this forest. It cannot be expected that fire conservancy will, in all cases, at once produce a crop of young teak; in many forests it is only a preparatory measure, the effect of which is to improve the condition of the forest generally before further steps are taken to promote the growth of teak. But fire conservancy is nevertheless the first condition of all improvement, and it is obviously waste of time and money to plant teak or to encourage its natural growth in a forest which is not protected from fire. These remarks it seems necessary to make, because the forest officers in the Tenasserim circle write as if they doubted the necessity or even the advantage of fire protection in teak forests.

5. The breaking out of a destructive fire in the Sinzway forest after the close of the year, which is reported in paragraph 57 of the report, was a most disastrous calamity; and the Governor General in Council trusts that the Conservator will take effective steps to guard against similar calamities in future.

6. The outlay during the year on the improvement of the forests has been in the Tenasserim division—

	Rs.
On natural forests	352
On plantations	918
TOTAL ...	Rs. 1,270

7. From paragraph 69 it is gathered that until lately all officers in charge of the forests in the Salween Circle resided at Moulmein, which, as the Conservator correctly says, is much too distant from the forests to admit of their effective supervision. In paragraph 2 of your review a plan is mentioned for breaking up the Salween division into three separate charges, and it is hoped that the current year's report will record the completion of this arrangement.

8. An interesting report by the late Mr. Lee regarding the islands in the Mergui Archipelago is recorded in paragraphs 103 to 144 of Major Seaton's report. The chief forest produce of these islands is akyaw, the scented wood which is found in the stems of *Aquilaria agallocha*. It is understood that the annual cuttings are estimated at 8,000 trees, yielding about 1,000 viss of scented wood, at a value of Rs. 10,000. This unrestricted destruction is much to be regretted; the Conservator is apparently not in a position to recommend measures for its protection, but it is hoped that you will be able eventually to take steps to prevent the extermination of this valuable tree.

9. The yield of the forests in the Tenasserim circle has been as follows :—

1. Teak brought to depôt on account of Government—	
From the forests	12,253 tons.
Drift and sea-shore timber	3,549 „
2. Teak brought out by permit-holders from Government forests	1,725 „
3. Teak brought from forests held under 30 years' leases ...	1,814 „
4. Other timbers brought to depôt on account of Government—	
Thitka	337 „
Padouk	238 „
Other kinds	87 „
Total yield in 1876-77 ...	20,003 tons.

These figures agree with those recorded in Statement 56, but they do not agree with those entered in Statement 55, which gives the yield as follows :—

	Cubic feet.
From Government forests	24,718
Drift timber	46,064
Total ...	70,782

equal to 14,156 tons. The apparent discrepancy should be explained.

10. A passage in paragraph 152 of Major Seaton's report is understood to mean that the yield of the forests in 1875-76 had been incorrectly increased by the entry of 1,200 logs of Thoungyeen timber in course of transit at the close of the year, which should be added to the yield of 1876-77 and be deducted from that of 1875-76. Timber in transit, I am directed to state, must not on any account be included among the timber shown in the returns as received in depôt.

11. In paragraph 156 Major Seaton gives an interesting account of the teak timber removed from the different forest districts in the Tenasserim Circle since the annexation of the province. The total outturn from 1829 to 1874 is stated to have amounted to nearly 600,000 logs, of which the Attaran forests furnished 281,261, and the Thoungyeen 155,338 logs. These figures seem to justify the conclusion that some of the Government forests in the Tenasserim Circle, if duly protected and improved, may again be made to yield considerable supplies of teak timber.

12. From a review of the present state of the teak-producing forests in the Tenasserim Circle, Major Seaton draws the conclusion that the prospect of maintaining a steady revenue is not very hopeful. This conclusion may be correct as far as it relates to the present time; but as regards the future, there seems to be no reason why those forests in which the teak has not been completely exterminated should not recover and again be made to yield considerable supplies of teak timber. But the Conservator is doubtless correct in saying that every effort must be made towards introducing other woods into the market, whereby the revenue may be increased.

13. The exports of woods of other kinds from the Tenasserim ports, as detailed in paragraph 174, are, as yet, insignificant; but it is evident, from paragraphs 163 to 173 of his report, that the Conservator has used his best efforts to stimulate the export of these woods.

14. In 1876, when in England on furlough, Major Seaton recommended that teak timber should be supplied direct to the Admiralty by the Forest Department in Burma. In consequence of this recommendation, 760 tons of selected squares, crooks, and planks were sent Home for that purpose. In paragraphs 178 to 182 the Conservator gives an account of this operation. No less than 9,798 logs, yielding 6,569 tons of squared timber, had to be cut up, in order to furnish the quantity of selected timber required.

It is satisfactory that the operation did not result in actual loss to Government; but it is obvious that, except when special classes of timber are required for the public service, no useful object is gained by the Forest Department undertaking such transactions.

15. In the Pegu Circle the area protected from fire at the commencement of the year was 36,957 acres. Of this area, according to Statement 47, 1,267 acres, out of 3,801, were burnt in the Kangyee forest, 410 acres in Magayee, and lastly, the whole of the Kyetpyoogan plantation, measuring 683 acres, was burnt. These figures show that the success of these operations is as yet extremely uncertain.

16. This, unfortunately, is not the first time that fire has been allowed to pass through the Kyetpyoogan plantation, upon which, since its establishment in 1870, the sum of Rs. 74,811 has been expended.

17. The Conservator states in paragraph 55 of his report that the area is so small, that he cannot afford a separate establishment for it. In this respect, however, it may be useful to invite attention to the letter from this office, No. 363, dated the 7th March 1877, in which it was suggested whether a larger area of forest land near Kyetpyoogan might not, with advantage, be placed under the Forest Department. Considering its vicinity to Rangoon, and the certainty of a market in future for wood of all classes, this seems to be the correct solution of the difficulty, and the measure is again recommended to your consideration.

18. The chief extensions in the matter of fire-protection were in the Bwet and Nyanlay Reserves in Tharrawaddie, and the Yaynay Reserve in the Sittang Division. You have justly called the Conservator's attention to the large outlay incurred on the clearing of fire-lines round these forests. A sum of Rs. 5,432 was, it seems, expended on fire-tracing in the Nyanlay Reserve of 5,840 acres, but the reserve was burnt nevertheless.

19. Mr. Ribbentrop reports extensive measures taken in the forests under his charge to secure the extension of teak by artificial means. Including 322 acres planted in Magayee at a first cost of Rs. 22,000, and 245 acres of toungya plantations at a first cost of Rs. 1,046, he shows a total area of 1,789 acres artificially stocked with teak during the year. Of this area, 1,080 acres were treated by dibbling in seed in clearances in the forest, but the success of this plan is as yet doubtful.

20. The outlay during the year on works of improvement in the Pegu Circle has been as follows:—

	Rs.
Natural forests	17,725
Plantations	30,927
Total ...	48,652

The Governor General in Council will gladly sanction any well-considered outlay on this account, but careful economy is necessary in this, as in other branches of work; and in future reports it will be useful to give a more complete and more detailed account of the outlay under this head in the Pegu Circle than is recorded in the present report.

It must be distinctly understood that no outlay on this account must be incurred in any forest in British Burma unless the protection from fire of that forest is secured.

21. The yield of the forests during the year under review is not as clearly stated in this as in the report of the Tenasserim Circle. If the figures of Statement 56 are correctly understood, the yield stands as follows:—

1. Teak brought to depôt on account of Government—		
From the forests	21,031	Tons.
Drift and sea-shore timber	3,550	„
2. Teak brought out by permit-holders from Government forests	3,475	„
3. Other timbers brought to depôt on account of Government	1,982	„
Total ...	30,038	Tons.

22. The low prices per ton realised by the sale of yard and mast pieces are remarkable, if compared with the high rates paid for the extraction of this timber; and it seems a matter for consideration whether too much encouragement has not been given to the extraction of long timber. The following figures will explain what is meant:—

	Quantity sold.	Amount realised.	Amount expended.
	Tons.	Per ton. Rs. A.	Per ton. Rs. A.
Yard, mast, keel, and stem pieces above 30 feet long ...	1,724	27 0	19 2
Doogies, 30 feet long	14,016	40 5	15 4
Loozars, 15 feet long	5,025	36 14	17 0

23. A satisfactory feature in the Pegu Report is, that 1,453 tons of thitka and thitkadoe were sold by public auction at Rs. 20-8 per ton, in addition to 451 tons on indent at Rs. 19 per ton, and that the Conservator reports that the demand for these woods is constantly rising. Mr. Ribbentrop apparently takes a much more sanguine view than Major Seaton of the future prospects of the trade in these woods.

24. The quantities of teak timber imported into and exported from British Burma during the year stand as follows:—

Imports, in tons, from beyond the frontier.

	Tons.
By Salween river	100,000*
„ Sittang „	37,184
„ Irrawaddy „	5,044
Total ...	142,228*

Exports, in tons.

	Tons.
From Moulmein	78,573
„ Rangoon	39,147
Total ...	117,720

25. The Governor General in Council endorses your commendation of the two Conservators, Major Seaton and Mr. Ribbentrop, for the good services rendered by them during the year. His Excellency in Council is glad to notice from your review that the work of demarcation has now been thoroughly begun in the Tharrawaddie Division, and that the good progress of these operations so far is due to a great extent to the cordial co-operation of the Civil and Forest Officers employed on this important work. You have specially brought to notice the care and judgment displayed by Mr. A. O. Brown, of the Civil Service, who acted as civil demarcating officer during the year.

* These figures are estimated, Major Seaton not having stated the cubical contents of the timber imported.

RESOLUTION

ON

THE FOREST REPORT, BRITISH BURMA,

For the year 1876-77.

Extract from the Proceedings of the Chief Commissioner of British Burma in the Forest Department,—No. 185, dated the 21st November 1877.

READ:—

Reports on Forest Administration in the Tenasserim and Pegu circles of British Burma for the year 1876-77.

RESOLUTION.—In May 1876 the Government of India declared its inability to strengthen the hands of the Forest Department in British Burma, by transferring any more officers to the province, and placed before the Local Government the alternative of directing the Conservator of Forests to restrict his operations. Having regard to the growing importance of the Department, its large contributions to the general revenues, and the undesirability of adopting any measures likely to check its extended usefulness, the Chief Commissioner, in the following month of August, submitted to the Government of India a scheme by which the step suggested might be averted, while the result would in all likelihood be a closer administration, a more efficient working, and a speedier development of resources. Major Seaton, the Conservator of Forests, was at the time on furlough to Europe, his place being filled by Mr. Ribbentrop, who during his officiating incumbency of some 18 months had conducted the duties of Conservator with undoubted vigour and no little success. It appeared to the Chief Commissioner, on a general review of the whole position, that the time had come when the Forest administration of the province might with advantage be divided into two distinct charges, under separate Conservators, "one for the forests on the Moulmein side, and the other for those of Pegu, including the valley of the Sittang, the timber from which comes into Rangoon on the Moulmein side." The natural forests in the Tenasserim division had for a long time been at the mercy of the Karens inhabiting their neighbourhood: they were dotted over with patches of the *toungya* cultivation carried on after the wasteful fashion of these nomadic people, and were threatened thereby with gradual extermination; while apart from the protection of teak, and the removal from time to time of small quantities of mature timber, nothing had been done, either in the way of demarcating the forests, or placing them under more stringent management and control. To do so effectively involved the personal presence on the spot of the Conservator and his officers for months together, and, in view of the important work of demarcation then going on in the Pegu forests requiring constant and watchful supervision, it was felt that the superintendence of all the forests in British Burma under one Conservator was during the progress of these operations too extensive a charge, and that, by dividing it, a better administration and a more thorough protection of the Government interests would be ensured. The Chief Commissioner accordingly proposed to the Government of India that on the return of Major Seaton from furlough, in October 1876, Mr. Ribbentrop should be placed in charge of the forests of Pegu, including the valley of the Sittang river, with the title of Additional Conservator, on a salary of Rs. 1,000 a month; while Major Seaton, who was personally well known to, and had gained the confidence of, the Karens

Appointment experimentally of an Additional Conservator.

on the Moulmein side, should assume charge of the forests in the remaining portion of Tenasserim, comprising that portion of the Shwe-gyeen district which lies within the Salween watershed, the Amherst, Tavoy and Mergui districts, including the islands on the coast and the Mergui Archipelago, equal in area to 35,309 square miles, with an estimated population of 430,276 souls. The Government of India accepted the Chief Commissioner's proposals on the 7th of October 1876,* and on the 20th of that month the Tenasserim forests became a distinct and separate Conservator's charge, under Major Seaton, comprising some 550 square miles of teak localities, besides large tracts covered by *padouk* and *eng* and other valuable timber.

* Letter No. 1046, dated 7th October 1876, from Revenue Secretary.

The Tenasserim Forest Circle.

2. As at present constituted, the new charge is formed into two divisions—the Salween division, comprising the tracts within the Amherst and Salween districts, with the part of the Shwe-gyeen district east of the Sittang; and the South Tenasserim division, consisting of the forests in Mergui and Tavoy—the whole being under a Forest staff of a Conservator, a Deputy Conservator, two Assistant Conservators, and a Sub-Assistant Conservator. Proposals are now before Government for breaking up the Salween division into three separate charges, as it is found to be too large for control by a single officer with his head-quarters at Moulmein.

The Pegu Forest Circle.

3. The Pegu jurisdiction consists of the Rangoon, Tharrawaddie, Prome, Western, and Sittang divisions, under a Conservator, three Deputy Conservators, six Assistant Conservators, and two Sub-Assistant Conservators. The Deputy Conservator of the Sittang division, which is an extensive charge, having complained of the great destruction of teak trees by the Karens in cutting their *toungyas*, it was decided, rather than harass the people by immediate prosecutions against them under the Forest Rules, with the probable effect of driving a large proportion of the Karen population across the frontier, that Mr. Nisbet, Assistant Conservator, should be put in charge of the Shwe-gyeen sub-division, and proceed, in consultation with the Deputy Commissioner, to demarcate large tracts, and in doing so to gradually and cautiously enforce the rules.

4. A separate report for the year under notice has been submitted by each Conservator,—that by Major Seaton according to the old classification of subjects, and that by Mr. Ribbentrop in accordance with the arrangement laid down in the new Forest Code. Mr. Ribbentrop's statistical tables, however, embrace the Tenasserim figures, so that the results of the whole Department are shown side by side. Though the reports have not been received within the date prescribed for their submission, the introduction of the new arrangements may partly excuse the want of punctuality.

State reserves.

5. Satisfactory progress has been made in the demarcation of reserved tracts during the year. At the end of 1875-76, the area of the State *reserves* in the Tenasserim circle amounted to some 17 square miles. During 1876-77, an additional area of 47 square miles of proposed reserves was demarcated, and the necessary surveys and maps completed, for the reserve of a further approximate area of some 170 square miles, of which 137·5 miles were in the Attaran district alone. The work of demarcation was accomplished without affecting injuriously the prescriptive rights of the villagers; and although there are numerous Karen hamlets quite close to the teak tracts, it was found possible to exclude all of them but three from the boundaries selected. As long as these villages remain on their present site, the danger is incurred of the destruction of the reserves from the firing of the *toungya* clearings. The peculiar system of this cultivation directly increases the risk, and if Major Seaton should find a favourable opportunity of inducing the people at a fair compensation to remove their village to a safe distance, he should take advantage of it.

In the Pegu circle, the area of State reserves, which at the close of 1875-76. was represented by 597 square miles, was increased by 16,896 acres, or 26 square miles, consisting of fuel reserves exclusively; but sanction has since been given to the settlement of the Thongzai teak reserve, comprising some 70 square miles, and of five others, aggregating 159 square miles; while about 400 square miles besides

have been selected for reservation in the Tharrawaddie division. It is anticipated that during 1877-78 a total of 700 square miles will have been added to the area of the State forests in Pegu; and the Chief Commissioner takes this opportunity of recording his satisfaction, not only with the progress that has been made in this most important branch of Forest work, but with the very commendable discretion and good judgment of the officers, both civil and departmental, entrusted with the adjustment of the rights claimed by villagers within and in the vicinity of forests. It is intended that the work of demarcation now so thoroughly begun in the Tharrawaddie division shall be extended continuously through all the divisions till it is completed.

Protection from fire.

6. Considering the unusually protracted and trying dry season of 1876-77, there is cause for congratulation in the fact that, with the exception of some 443 acres destroyed in the Pegu circle, and the burning of a portion of the Sinzway State forest in the Yoonzaleen, there were no accidental fires. In the latter case, the Karen Hill-men are directly responsible for the disaster. That the risk from fire will ever be totally and effectually removed is not to be expected; but much may be done to lessen the danger, by insisting that the Karens, who are generally to blame, shall widen the fire-traces round their *toungyas*, which as a rule are too narrow; and by the Forest Officers themselves adding to the security of the reserves, by having broad fire-paths traced through the reserves, where practicable without destroying valuable trees, thus intersecting the forests in such a way that a fire, if it does break out, shall be confined to the particular block where it began. It is useless to trust either to the promises or good intentions of the Karens themselves, for they are proverbially careless and indifferent to consequences; but their interest in the matter may be profitably aroused by the judicious bestowal of rewards for watchful services where immunity from injury has been secured by their exertions. The total area protected from fire in the Tenasserim division at the end of 1876-77 amounted to 27,360 acres, or 16,640 acres in excess of the area protected up to the end of 1875-76, after allowing for the 8,960 acres of the Sinzway reserve destroyed; and the entire work of fire protection, including the outlay on that reserve since 1871, has been done at the small cost of Rs. 419-11. This contrasts violently with the cost of similar operations on the Pegu side, where the fire-tracing of 43,432 acres has cost up to the end of 1876-77 the large sum of Rs. 35,869. It may be that the work in Pegu was carried out on a more effective and permanent plan, as described at page 11 of the report; but some explanation by the Additional Conservator seems called for in the matter of expenditure, as the cost of fire-protection in his circle during the year under review amounts to Rs. 16,375, resulting in the addition of some 6,500 acres only to the area already protected.

Breaches of Forest Rules.

7. It is satisfactory to find that the number of prosecutions for breaches of Forest Rules have been few and quite unimportant, and that there were none at all for causing injury by fire. Out of a total of 73 persons prosecuted, convictions were obtained in 62 cases. It is not improbable that many offences are altogether undetected, and that compromises are effected by gratifications to petty Forest subordinates. Offences connected with drift timber and breaches of the rule as regards filing of incorrect reports are said to require more stringent penalties than the present rules permit. Final orders regarding the new rules must await the passing of the Forest Bill which is now before the Legislature.

Toungya teak cultivation.

8. During the year an area of some 79 acres was cleared in the Sinzway reserve of the Tenasserim division for *toungya* teak cultivation. The ground has, however, been only partially covered by plants, owing to an insufficient supply of seed. Besides this, some 20 acres were cleared and sown in the North Dalee reserve. In the Pegu circle, 464 acres were cultivated by direct Government agency, and 245 acres in *toungyas*, bringing up the total area under teak cultivation in Pegu by all methods to 1,789 acres. It is probable that little progress will be made in this direction for some time, as under the orders of Government such cultivation is to be undertaken only in reserves that have been fire protected for some three or four seasons, and

the girdling of teak trees in reserved forests is still prohibited. It remains, therefore, to encourage as much as possible this form of cultivation by the Karens in forests that are as yet unreserved, with a view of increasing their value by the time they are brought regularly under direct Forest supervision. The exclusion of fires from these unreserved tracts may be beyond our control, but it may be accepted that if *toungya* teak-sowing is persistently encouraged therein, a valuable proportion of the young plants and seedlings will (in spite of fires) escape destruction, and live to augment the revenues of future years. The proposal that all forest country throughout Tenasserim should be at once rendered subject to the provisions of Act VII. of 1865 can scarcely be entertained while the agency at our disposal is inadequate to enforce the rules. It is also still a matter of uncertainty as to how the tracts not included in the declared State reserves are to be dealt with; and in the anticipation of fresh legislation on the subject of forests, no definite action is desirable immediately. It has required the exercise of the greatest tact that the notifications of March 1876, reserving certain species of timber, have been satisfactorily worked even in the more central localities, where the people have made at least some advance in civilized intelligence; but it seems useless to expect the observance of rules in places where it is impossible, even for a part of the year, to depute officers to enforce the working of the measure, and where even a partially efficient subordinate agency could only be stationed at a greatly increased cost.

Cultivation of teak, &c., by departmental agency.

9. In the Tenasserim division no experimental plantation work of any sort was carried out. In the Thingan-nee-noung teak plantation of 1856, in the Attaran district, which was examined by Major Seaton in January 1877, there was found near its centre a thingan tree (*Hopea sp.*) which had been spared when the plantation was laid down. Round this tree there has sprung up a dense crop of thingan seedlings from four to ten feet in height, and occupying about an acre of ground. Here creepers were found to have in many instances destroyed some of the teak trees in the plantation; and measures should be at once adopted to weed it out, as it is evidently a valuable plantation, containing some trees of magnificent proportions. The height of 150 trees taken at random was found to be from 30 to 40 feet, and, where they have not been injured by other vegetation, they were regular in shape, straight, and free from branches to a great height. In the Sinzway reserve some clearances were made between the teak trees and teak seed sown over an aggregate length of five miles at a cost of Rs. 613. At Magayee, in the Rangoon division, a plantation was laid down of 302 acres sown with teak and pymma at a cost of Rs. 21,978; also a nursery of 20 acres, consisting of teak, pymma, thitkadoe, and padouk, to provide for blanks in case the sowing proved a failure. The result, however, was highly successful, and has proved to be the best of any cultivation yet attempted at the place, great pains having been taken with the experiment. In the Tharrawaddie division, 141 acres of bamboo growth were cut down in strips of 100 feet in breadth, and teak seed sown over the area in patches four feet apart. A similar operation carried out in 1874-75 on six acres has, after being set down as a failure, resulted eventually in a satisfactory growth of teak, the ground being now "sufficiently covered with plants," so that the present experiment, which has cost on an average Rs. 24 an acre, may, if carefully supervised, yield good returns. In addition to this, in the Tharrawaddie division, seed was dibbled in at spaces four feet apart over an area of 400 or 500 acres, at a cost of some Rs. 613, resulting in a yield of about 100 acres only fairly stocked with young plants, the seed having apparently been sown too deep. Since the close of the year under notice, some 500 acres more have been similarly treated, and it is in this way, coupled with the experimental cultivation by Karens in fire-traced reserves, that the future yield of our teak-producing areas is to be maintained and insured.

Minor cultivation.

Hevea elastica.

10. The Conservator reports the entire failure of the *Hevea elastica* seedlings brought out by him in Wardian cases from England. Only some 12 plants reached Burma alive: these were transferred to Mergui, where they sickened and died. A few plants of the Para India-rubber variety of the *Hevea* were got from Dr. King,

of the Botanical Gardens, Calcutta, and these are reported as thriving well at Mergui. Ten acres were added to the area under *cinchona* cultivation in the Sittang division, of which five acres were actually planted during the year, and a considerable amount of transplanting took place. Some 4,000 seedlings and cuttings of the *Cinchona condimini* were supplied to Missionaries, who report that this species has not done so well as *Cinchona succirubra*, which grew admirably. The cultivation of all kinds at Magayee is so scattered and unequal in distribution that the actual cost of individual experiments can only be ascertained after much trouble; but pains should be taken to avoid burdening any particular experiment erroneously with expenditure foreign to it, and so creating a false impression as to its actual value or the reverse. The Government of India have called attention to the annual cost of the cinchona plantation at Thantoungyee on the Sittang, which seems to increase year by year; and the Conservator's report on this, which is awaited, may possibly reveal errors in allotting the charges, which would materially alter the figures. In former years, there was undoubtedly great laxity in apportioning the charges on these minor operations; but the subject is now claiming more attention. It would have been interesting to know what is being done in the experimental cultivation of *lac* and *Ficus elastica;* but the Pegu report is silent on both subjects, and, beyond the commercial fact that 5,556 maunds of raw caoutchouc and 11,513 maunds of lac were exported from Rangoon (also 576 maunds of the latter from Moulmein), and valued respectively at Rs. 3,21,712 and Rs. 1,46,725, no allusion is made to either.

Cinchona.

Ficus elastica.
Lac.

11. During the year, Mr. James Lee,* Overseer in the South Tenasserim division, was specially deputed to examine the resources of the islands in the archipelago, to obtain information as to the nature and quantity of the forest produce removed therefrom, and its destination after extraction—to glean all particulars available relative to the akyaw or eagle-wood tree (*Aquilaria agallocha*) and its extraction, the season at which the produce-collectors visit the islands, and the localities from which these people come. Mr. Lee submitted an intelligent and interesting account of his visit. The islands, which vary considerably in size, number in all some 2,000, but only a few of the larger ones could be visited and reported on. The result as regards the akyaw tree was, that the lumps of hardened scented resin, found imbedded in the trunk, form the only valuable item of forest produce removed from the islands. Insect dammer, honey, and bees-wax are also collected, but are not plentiful, seldom more than 50 or 60 viss of each being gathered in one year. It is estimated that about 1,000 viss of "akyaw" are removed annually,—the price varying from Rs. 3 to Rs. 22 a viss (3½ lbs.), and probably equal in value to an average total of Rs. 10,000. Very little is known of the natural history of the tree, and even its identity seems to be a matter of dispute. Mr. Lee describes it as the largest tree in the forest,—one which he saw felled girthing eight feet and-a-half at eight feet from the ground, and measuring 72 feet from the ground to the first branch. The natives say that there are two distinct kinds of tree which each yield precisely the same substance; but this can only be decided by seeing both trees in flower, as in other respects they look very much alike. The Selungs who inhabit the islands, and whose numbers appear to be decreasing—there being now a population of only 600 souls in all the islands—barter the akyaw with the Malays and Chinese who visit them for tobacco, paddy, cloth, and occasionally opium. They have few means of gaining a livelihood, except by fishing; they are not cultivators, and from their timid natures are very shy of strangers. It has always been difficult to get access to them on account of their vagrant habits, and there can be little doubt that if the right of collecting the akyaw was farmed out to an outsider, it would lead to acts of oppression. The suggestion, therefore, has not been entertained. From Mr. Lee's report, the formation of the gum or resin in the tree would appear to be invariably the result of injury done to the tree by

Survey Report of the forests in the Mergui Archipelago.

Akyaw tree.

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* *Note.*—The Chief Commissioner regrets to have received a recent report of Mr. Lee's death.

dah-cuts : at all events, the akyaw is found in the minutest particles only in healthy living trees, while in the decayed portions of trees that have been felled it is met with in abundance. It is suggested that the yield might be increased by auger-borings, and experiments will be made. Some 8,000 trees in all are said to be cut down annually on the various islands, but there is little doubt that the work of destruction is greatly aided by every large tree which is felled bringing down with it in its fall two or three others. The greater bulk of the "akyaw" collected is sent to Singapore for shipment to China, where the small pieces are used for torches, incense, and medicine.

Blasting operations.

12. The blasting operations in the Prome division during the year, at the Hlowa Choung, resulted in the destruction of 18 rocks, or 62,236 cubic feet, at a cost of Rs. 1,056. This shews an improvement of nearly a *third* more work done, at an outlay of nearly Rs. 100 less, than was accomplished last year. Some expense was also incurred in keeping the streams in the Tharrawaddie division clear of *toungya* refuse, and many of the creeks were reported to be in a bad and unfloatable state, so that it may be anticipated there will be a considerable outlay to be reported on at the end of 1877-78.

Forest leases.

13. In the Pegu circle all forest leases have expired, while the only two remaining in the Tenasserim division will cease in December 1877, when all the forests in the division will come under direct Government agency.

Outturn of timber from Government forests.

14. The total quantity of timber extracted during the year from the different forests was—

	Logs.	Pieces.	Sleepers.	Tons.
Teak ...	52,884	...	44,498	46,481
Other woods ...	2,157	1,282	...	2,608

besides a quantity of scantlings of other kinds and a few hundred saplings. Compared with the outturn of 1875-76, these figures show a decrease in teak of 166 tons, and in other sorts of 9,146 tons. This latter item is explained by the cessation of contracts for sleeper pieces required by the Railway, of which 23,650, aggregating 9,716 tons, were worked out in 1875-76. There is a further decrease in timber worked out by permit-holders, the figures being 5,200 tons, against 6,094 tons in 1875-76. The permit system has now ceased in Pegu, and it is confined in Tenasserim to the more distant and outlying tracts. In the face of this, and the stop that has been put to girdling operations, the quantity of timber extracted by direct Government agency has been highly satisfactory. The Conservator sounds a warning note as to the probable serious falling-off which must take place in regard to the outturn of teak on the Tenasserim side before many years have elapsed. In some places the uncontrolled girdling of trees by the Karens, and in others the operation of permits allowing the girdling of all trees with a minimum girth of five feet, have had a pernicious effect in the destruction of much valuable but immature timber, although, even in the most exhausted tracts, there are still small isolated spots covered by fine trees, and as yet unworked ; while in the Upper Salween, where the growth of teak outstrips that of all other localities, the trees are particularly tall and shapely. Here then, if anywhere, the field is open for the reproduction of teak by the same agency that has been employed in Pegu with apparently every chance of success. In these large denuded spaces every endeavour should be made, by both Government and Karen agency, in planting and sowing, to create a recompense for the mischief already done, and thus, with the introduction of other woods into the market, to secure the continuous yield of the Tenasserim forests. The work is of the utmost consequence, and deserves immediate attention.

Thitka and *Thitkadoe*.

15. The operations in this timber have not been very encouraging, and, with the exception of some small quantities sold for purposes of furniture-making and for trial as railway sleepers (in which latter capacity thitka is a failure), some difficulty was found in disposing of it,—600 logs remaining in stock when the year closed. A better

demand has since sprung up, and prices are steadily rising. It is intended to bring a larger quantity of both into the market next season.

Padouk.

16. There was a considerably increased outturn of this wood compared with that of 1875-76, and a demand existed for its use in making the naves of cart wheels. About 600 logs were on hand at the end of the year, and, as this wood should be well seasoned before being sold, it is wise to keep a considerable quantity in stock. About 180 tons were supplied at the close of the year to the Gun-carriage Factories at Madras and Bombay. The discontinuance of padouk trade permits has been recently sanctioned, both with a view to assisting the Government revenue, and to keeping the market supplied with only good and sound timber. The measures contemplated of obtaining from Tavoy and Mergui railway sleepers of gungaw and other hard woods are approved.

17. The imports of teak from beyond our frontier were as follows :—

Imports of foreign teak.	1875-76.	1876-77.	Decrease as compared with 1875-76.	Increase as compared with 1875-76.
	Logs.	Logs.	Logs.	Logs.
By the Salween	138,609	124,490	14,119	...
„ Sittang	38,327	39,502	...	1,175
„ Irrawaddy...	12,030	6,891	5,139	...
	188,966	170,883	18,083	...

These figures shew a falling-off in the quantity of teak brought down the Salween, of 14,119 logs and pieces, as compared with the figures of the previous year, 124,490 logs and pieces having been brought into our territory, as against 138,609 in 1875-76. The imports of the year under notice are, however, still unusually large, the average quantity being about 75,000 logs only. The decrease in 1876-77 is attributed to the short rain-fall of the year. The Additional Conservator offers no opinion as to the cause of the decrease in foreign timber imported by the Irrawaddy.

British teak.

18. There has been again a large decrease in the quantity of British timber entered for duty at Kadoe, the figures being—

	1876-77.	1875-76.	1874-75.
Logs and pieces	7,532	14,127	21,110

The curtailment of the permit system is chiefly the cause of this decline; but some allowance must be made for the nature of the season and amount of rainfall in each particular year, as the figures for 1874-75 were undoubtedly improved by the fact that much timber neaped in the previous season actually reached its destination in that year.

Duty realized at Kadoe on foreign timber.

19. The anticipations of the Conservator of Forests as to a serious decrease in the amount of duty at Kadoe on foreign timber have not been realized. Against a budget estimate of Rs. 2,25,000, the collections have amounted to Rs. 2,16,244, and this, too, in the face of a depressed market, the inferior quality of much of the timber, and the non-arrival of better-class logs, consequent on the deficient rainfall. This last cause will probably not affect the returns of next season, and it may be assumed that the amount of duty realized in 1877-78 will at least equal that of 1876-77.

Financial results for the year.

20. The grand total of gross revenue accruing to the Department amounted to Rs. 15,51,468, of which Rs. 10,04,506 belonged to Pegu, and Rs. 5,46,962-8-2 to Tenasserim. It is thus divided :—

Receipts.

	Rs.
I.—Revenue from timber—	
(*a.*) Value of timber brought to depôt by direct departmental agency ...	11,80,420
(*b.*) Revenue from timber removed by permit-holders, &c. ...	75,476
(*c.*) Do. from confiscated drift and wharf wood	28,824
II.—Revenue from minor produce grazing dues and sale of grass... ...	18,204
III.—Duty on foreign timber at Kadoe	2,16,244
IV.—Miscellaneous receipts, fines, refunds from other departments, &c. ...	82,300
Total, omitting fractions ...	15,51,468

Against this there were the following :—

Disbursements.

	Rs.
A.—Conservancy and working...	8,22,065
B.—Establishments	1,82,979
Total ...	10,05,044
Net revenue	5,46,424

Separating these figures as they affect the individual Conservatorships, we get the following results under the head of receipts as compared with the previous year :—

Receipts.

		1876-77.			1875-76.			Increase.			Decrease.		
		Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Pegu ...	I. (*a.*)	8,94,625	7	2	13,26,187	6	4	.....			4,31,561	15	2
	(*b.*)	56,857	12	9	15,926	7	9	40,931	5	0	.....		
	(*c.*)	8,078	2	6	23,544	5	9	.....			15,466	3	3
	II.	18,204	6	0	10	0	0	18,194	6	0	.....		
	III.	.....			.....			.....			.....		
	IV.	26,739	13	9	8,708	2	6	18,031	11	3	.....		
	Total ...	10,04,505	10	2	13,74,376	6	4	.....			3,69,870	12	2

or a total decrease over all of no less than Rs. 3,69,870-12-2. The falling-off under I. (*a.*) is set down to the diminished demand for timber by the Railway and other public departments. The decrease shewn is Rs. 4,31,561-15-2; but from this a sum of Rs. 58,375 or thereby has to be deducted, being the amount of bad debts written off to profit and loss with the sanction of the Government of India, and which sum falls on the previous year. The improved receipts under I. (*b.*) are accounted for by duty received on sales of the 12 sorts of wood reserved under notifications 33 and 34 of 8th March 1876, as also by the fact that the Railway Department removed, at their own cost, from the forests a quantity of refuse teak, paying Rs. 10 a ton for it. This timber had been left in the forests by the Department as unfit for extraction. The falling-off under I. (*c.*) is more apparent than real, and is quite atoned for by the improved receipts under Head IV. If there has been less confiscation of timber, there has been much activity in salving, which is quite as satisfactory, and the receipts for the combined items shew some Rs. 2,566 in favour 1876-77.

		1876-77.	1875-76.	Increase.	Decrease.
		Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
TENASSERIM.	I. (a.)	2,85,794 4 2	1,29,856 8 7	1,55,937 11 7	.....
	(b.)	18,618 8 8	20,637 15 0	.....	2,019 6 9
	(c.)	20,745 13 8	8,744 4 0	12,001 9 8	.....
	II.	.....	.....	.....	.....
	III.	2,16,244 1 6	2,98,761 7 0	.....	82,517 5 6
	IV.	5,559 13 0	5,018 10 8	541 2 9	.....
	Total ...	5,46,962 8 2	4,68,018 12 10	83,943 11 4	.....

or an increase over all of Rs. 83,943-11-4. This result is mainly attributable to the unusual activity shewn in the conversion and utilization of British timber, by which, in the face of a large falling-off (Rs. 82,517) in foreign timber revenue, it was still possible to shew a satisfactory surplus.

Expenditure.

*Tenasserim	A. ...	4,04,411
	B. ...	44,649
Pegu ...	A. ...	4,17,654
	B. ...	1,88,880

21. The chief item of increase under A. is in the cost incurred in bringing timber to depôt,—the figures having risen from Rs. 4,93,861 in 1875-76 to Rs. 6,61,362* in 1876-77. In this amount, however, there is included a sum of Rs. 102,860, expended in converting at the depôt a quantity of timber for which a profitable sale could not be found at the time. The other items are about on an average, excepting the cost of fire-protection and conservation of natural forests, which rose from Rs. 5,700 to Rs. 18,060; while the conservation and protection of artificial forests cost only Rs. 31,800, as against Rs. 40,900 in the previous year. Under Head B. there was an increase of some Rs. 29,000, of which Rs. 20,000 are shewn under salaries, Rs. 8,000 under travelling allowance, and the balance under contingencies.

Prices realized on sales of timber.

22. These have been on an average of Rs. 2 per ton below the prices realized in the preceding year. The decrease is attributable chiefly to the depressed state of the market, more particularly at Moulmein.

Shipment to the Admiralty.

23. A cargo of selected teak was despatched to the Home Government, by the ship *Dreadnought*, during the year, for dockyard purposes. It consisted of some 700 tons squares, 50 tons of crooks, 10 tons planks, and 432 tons scantlings; and a further order for some 800 tons has since been sent. From a report received since the close of the year, it is ascertained that some of these squares have not turned out to be "first-rates." Uniform excellence is perhaps impossible, but every care is exercised in selecting the timber.

Contractors' outstandings.

24. In Tenasserim, the Conservator reports that there were no outstandings under this head at the close of the year; but this statement is qualified by a large advance of Rs. 87,863 having been made just as the year closed. The outstandings in Pegu, except some Rs. 3,083, are reported to be "all covered, and can be adjusted at any time." The utmost caution is, however, necessary to avoid bad debts, and contractors should on no account be allowed to get very deeply into the Government books.

Bamboo-crushing rollers for paper manufacture.

25. It is to be regretted that, through the defective character of the machinery sent out from England for the purpose, a fair opportunity was not obtained of thoroughly testing the value of this experiment; nor can it be said that the arrangements in connection with the shipping of the material were altogether satisfactory, involving, as they did, a considerable loss of Government money.

26. There has been less sickness than in the previous year, and no deaths have occurred amongst the Forest Officers, although some of them have undergone much hard work and exposure. Cholera and fever have, however, been rife, and have carried off several members of the subordinate establishments.

Health of officers.

27. The Additional Conservator has appended to his report a special one on the working of notifications Nos. 33 and 34 of 8th March 1876. The subject involves many difficult questions of detail which are still in a tentative and preliminary stage. The rules evidently require much careful elaboration before any definite settlement can be finally arrived at. A Committee, including some District Officers, will be entrusted with the revisal of the rules. It is unquestionable that a too harsh or close adherence to the letter of the notifications would go far to alienate the good-will of the people in many parts of the province. The Chief Commissioner's desire had always been that the new regulations should be introduced with caution and moderation, and it was certainly never intended that *toungya* cultivation should be abruptly interfered with under the notifications. It is evident, from the numbers given of free and trade permits in many districts, that the interpretation of the rules is differently construed by different District and Forest Officers,—a confusion which can only be remedied by a clearer definition of the terms employed in the rules.

Reserved kinds of timber and cutch permits.

28. A special report on this will be submitted to the Government of India on an early date.

Effects of the appointment of Additional Conservator.

The Chief Commissioner desires to record his acknowledgments of the services rendered by Major Seaton and Mr. Ribbentrop. It has been a year of active operations, including important changes in departmental administration, and the first complete endeavour to carry out a systematic demarcation of State reserves. In these directions, and in their advice in connection with the Bill before the Legislative Council for the management and preservation of Government forests—a measure which closely affects the welfare of the province—their assistance has been of great value. The Chief Commissioner is also glad to notice the favourable testimony borne by both Conservators to the activity and zeal of most of their subordinate officers. In the demarcation work in the Tharrawaddie division, Mr. A. O. Brown, of the Civil Service, deserves special commendation for the care and judgment he shewed in the discharge of a laborious and difficult duty.

Services of officers.

By order of the Chief Commissioner,

C. W. STREET, MAJOR,
Secretary.

No. 986-59.

FROM

THE ADDITIONAL CONSERVATOR OF FORESTS,

BRITISH BURMA,

TO

THE SECRETARY TO THE CHIEF COMMISSIONER,

BRITISH BURMA.

Dated Rangoon, the 10th September 1877.

SIR,

I HAVE the honour to submit the Annual Forest Report for British Burma, 1876-77. It consists of two parts,—the one treating of the forests in the Tenasserim circle, written by Major Seaton; the other, of those in the Pegu circle, by myself. The forms appended have been compiled by me in such a way as to give the results of the Tenasserim and Pegu circles separately as well as collectively.

The financial results (Form No. 49) for the province show :—

Receipts	Rs. 15,51,468
Expenditure	„ 10,05,044
Surplus	Rs. 5,46,424

This, if compared with last year's surplus, shows at the first glance a decrease of Rs. 4,26,342.

This decrease, however, is to a great extent covered by assets in favour of the year, amounting, as a glance at Forms 51 and 60 will show you, to Rs. 99,729 and Rs. 2,42,114 respectively, or Rs. 3,41,843 in the aggregate in favour of the year. The difference is accounted for by a decrease of Rs. 82,517 on revenue derived from foreign timber,—an income which is beyond our control.

I beg to point out that the assets mentioned above have been estimated at an extremely low rate.

These assets are, to a great amount, represented by a surplus of logs at Moulmein, estimated at only Rs. 10 per log, or Rs. 38,161.

Value of timber already sold at Calcutta, amounting to Rs. 49,365.

Value of squares and scantlings in the same market, Rs. 49,560.

Value of squares in Moulmein, Rs. 20,878.

Value of timber shipped to the Admiralty, Rs. 84,150, which might in my opinion be estimated at Rs. 20,000 more.

Outstandings by contractors in favour of the year :—

Pegu	Rs. 51,866
Tenasserim	„ 47,863

This latter outstanding is caused by a large unexpected payment at the close of the year in the Tenasserim circle, amounting to Rs. 87,863. This payment, together with Rs. 1,02,860 expended on conversion, &c., of timber which was unsaleable in the local market at remunerative prices, also accounts for the large increase of expenditure during the year.

The timber market was, especially in Moulmein, in a depressed state throughout the year.

The average of prices realized was :—for Pegu, Rs. 37-13-4; for Tenasserim, Rs28-3-10 per ton; or for British Burma, Rs. 35-2-2 per ton, showing a falling-off of Rs. 2 per ton.

We can also point to a decrease in the cost of extraction, which amounted in Pegu to Rs. 15-7-7, in Tenasserim to Rs. 16-7-6 per ton, or for British Burma to Rs. 15-13-7, against Rs. 16-12-11 during the previous year. The falling-off in prices realized, as well as the rates paid, is due to an increased proportion of 2nd class timber,—the natural consequence of the suspension of girdling operations.

I have the honour to be,

SIR,

Your most obedient Servant,

BERTHOLD RIBBENTROP,

Additional Conservator of Forests,

British Burma.

PART A

REPORT OF THE

Tenasserim Forest Circle

FOR

1876-77

BY

Major W. J. Seaton, M. S. C.

Conservator of Forests, British Burma.

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REPORT

ON

THE FOREST ADMINISTRATION

OF

TENASSERIM

FOR

The year 1876-77.

Annual Report dated 1st June 1877, on the management and conservancy of the Tenasserim Forests of British Burma, for the Financial year 1876-77, by Major W. J. Seaton Conservator of Forests, British Burma.

SECTION I.

INTRODUCTION.

I. Special.

In accordance with the orders contained in Government of India letter No. 1046, dated Simla, 7th October 1876, the Forests of the Tenasserim Division with the exception of those of the Sittang Valley were, as a temporary and experimental measure, constituted a separate Conservator's charge from the 20th October 1876. A separation of the accounts from those of Pegu not being possible until the close of the official year they continued to be rendered as hitherto to the Accounts Branch Rangoon, for audit &c. The Tenasserim Forest, temporarily constituted a separate Conservator charge.

2. The Tenasserim charge embraces that portion of the Shwaygyeen District which lies within the Salween watershed, the Amherst district, and Tavoy and Mergui districts including the Islands along the coast and Mergui Archipelago, and extends over a total area of 35,309 square miles, or about ½ of the area of British Burma excluding the province of Arrakan. The Tenasserim Charge.

3. It is bounded on the East and South by the Western boundaries of the Karennee States and Siam, on the North and North West by Pegu, and on the West by the gulf of Martaban and Bay of Bengal as far South as the Pakchoung at Malawoon. Boundaries.

4. The following is an estimate of the areas cultivated, culturable, and of Waste and Forest land within this charge. Area cultivated and area of waste land.

	Acres.
Area under permanent cultivation	416,000
Culturable Land	9,270,400
Non-culturable, Waste and Forest Land	12,591,360

5. The population according to the last census is :— Population.

Maulmain Town	51,607
Amherst District	223,188
Tavoy town and District...	77,866
Mergui town and District	51,846
Salween district	25,769

Data are wanting for the part within the Shwaygeen district, but as only a small as well as hilly portion of this district is included, the population will be found on an average not to exceed 10·2 souls to the square mile.

	Souls to the square mile.
Amherst	18
Salween	5·5
Tavoy	10·8
Mergui	6·6

The teak localities.

6. The Tenasserim Teak localities, estimated to cover an area of 438 square miles, are :—

	Approx. area	Estimate 1st class trees.
Beeling	6	10,000
Yoonzaleen	12	25,600
Upper Salween	106	10,000
Thoungyeen	250	57,000
Houndraw	4	1,000
Doomdamee	30	20,000
Hlinebway	15	3,000
Lower Salween and Koloon	15	500
		127,100

In addition to these, are the Attaran and Pandaw Teak localities, the former estimated to cover an area of 100 square miles and the latter 10 square miles, but the greater portion having been in the hands of lease holders under the license system, is almost destitute of mature teak timber of marketable quality.

Padouk, Thingan, Thitka and other Forests.

7. Next in value to the Teak Forests are those in which Padouk *(Pterocarpus dalbergioides)* occur in some profusion. They are found covering considerable areas in the Attaran, Houndraw, and Thoungyeen valleys, but chiefly in the former where the tree is associated to a great extent with Eng, *(Dipterocarpus tuberculatus)*.

Next in importance are the evergreen Forests abounding in Thingan, *(Hopea Sp.)* and Thitka (*Pentace Burmanica*) and covering enormous areas. The principal localities are the slopes of the Donat Range, separating the Thoungyeen from the Hlinebway and Houndraw rivers, the Yoonzaleen and Attaran Districts, and throughout the greater portion of the Tavoy and Mergui Districts, and Mergui Archipelago. In these last named localities the Kanyin, *(Dipterocarpus alatus)* or wood-oil tree, forms a very considerable element in all the moist and evergreen Forests, and in the extreme southern portion of the Mergui District, the Gangaw (*Mesua ferrea*) is not only abundant but of excellent growth.

History of Forest Conservancy in Tenasserim.

8. In the Annual Progress Report for 1868-69, para 17, will be found a brief sketch of the earliest measures adopted by Government, for the protection of the Tenasserim Forests in 1827, the year subsequent to the annexation of the Province. The first attempt to work the Forests on Government account having failed, the Attaran Forests were thrown open to private enterprise on 1st May 1829, private individuals being furnished with licenses to fell and remove Teak timber having a minimum girth of 4 feet, over certain defined areas, and subject to the payment of an *ad valorem* duty of 15 per cent. on arrival at Maulmain. In 1832 a small native establishment was sanctioned for planting purposes and the protection of the Forests, and in 1841, it having been reported that the license system was leading to the extermination of the Teak Forests, an Officer (Captain Tremenhere) was appointed as Superintendent of Forests.

Experimental Teak planting.

9. In 1842 the first experiments were undertaken for testing the practicability of planting Teak. Small nurseries were formed in the Nat Choung, Mittigate and Kyoon Choung Districts of the Attaran Forests, but with no definite results. A nursery formed in the Hlinebway District in 1843, was destroyed by inundation.

New Rules providing for resumption of Licenses.

10. In the same year Rules were sanctioned providing for the resumption of licenses, and issue of 20 years leases, in which the minimum girth of the trees to be felled was raised to 6 feet, and a condition inserted that 5 young trees were to be planted for every tree felled ; but in the year following, a revised draft of Rules was sanctioned, providing certain fines for breaches of license, and authorizing the Forest Department to plant at the expense of the license holders. The court of Directors, however, disapproved of these Rules, and suggested the issue of long leases, in order that the holders should have an interest in the improvement of the Forests.

11. In 1845 a large number of Forest holdings were resumed by the Superintendent of Forests, (Captain Guthrie,) under a penal clause of the Rules of 1841, but the several parties were reinstated by order of Government. Forest Holdings resumed but Holders reinstated.

12. The license system was also introduced into some of the lower Salween teak localities, such as Koloon and Pandaw, but not in the Thoungyeen Forests, the Government considering that the Karen inhabitants who had killed many teak trees, and were paying taxes on their gardens and villages, had the first right to the produce of their own Forests. The right was, however, never formally recognized ; but they were allowed to work out the teak while others were excluded. The result of this procedure was that all classes who felt disposed, engaged in the removal of timber indiscriminately, until the Government found it necessary in 1843, to cancel by public Notification, all claims to cut timber in the Thoungyeen Forests. Subsequently the parties interested were allowed to remove timber up to the dry season of 1845-46. License system introduced into Lower Salween and Pandaw Forests.

13. In 1847 the system was introduced, of employing the Karens in the felling and removal of teak timber on behalf of Government, but subject to no restrictions of importance, and, the selection and girdling of the trees being left in their hands, considerable areas, easy of access, were speedily denuded of all trees of medium size. Contract System introduced.

14. In 1848 the Government of India authorized the late scale of duty— Rs. 4, for each log of 5 feet girth brought down the Attaran river, and Rs. 2, and annas 12, for each log brought down other rivers. Scale of duty fixed.

15. In 1856 experiments in teak planting were renewed and small plantations were established at the junction of the Thinganneenoung and Winyeo rivers (4½ acres), on Koloon Island, and Shwaygoon on the Salween river, 4½ acres. Experiments in Teak planting renewed.

16. In December 1857, the charge of the Tenasserim Forests was amalgamated with that of Pegu, and in 1858 a preliminary set of Forest Rules was issued by the Commissioner of Tenasserim for the protection of the Thoungyeen Forests. They were based on the Forest Rules promulgated in Pegu in 1856, and contained some important provisions. Tenasserim and Pegu Forest charges amalgamated.

17. The establishment maintained at this time for the Tenasserim and Martaban Forests, consisted of only one Head Assistant (Local Superintendent) one clerk, two Inspectors, one Burmese writer, and a number of Forest Peons, who were entertained only when required to be sent into the Forests. The annual cost of the establishment amounted to Rs. 7426-9-4. Strength of establishment Tenasserim and Martaban.

18. A revised Draft of Forest Rules was published on 1st October, 1859, the provisions of which related only to teak in the following matters. Revised Forest Rules.

(*a.*) Disposal of timber by public or private sale and gratuitously for religious purposes.

(*b.*) The marking and passing of timber, penalties for timber without a pass, and liabilities for loss of Government timber.

(*c.*) Collection of Revenue on Foreign timber by Collectors of Customs.

(*d.*) Drift timber and scales of salvage.

(*e.*) Trial of breaches of Rules by Superintendent, with appeal to Commissioner.

19. The teak localities were at this time surveyed with reference to their extent and resources, and arrangements made for securing a supply of seasoned timber, by carrying on girdling operations in accordance with a working plan, similar to that framed for Pegu in 1856, they were divided into six main divisions, in each of which one fourth of the available 1 class teak trees, with certain exceptions, were to be girdled annually, it being estimated that a rotation of 24 years sufficed to allow of trees II class to attain I class size. Regular girdling operations introduced.

20. Girdling operations on this plan were not however introduced into the Thoungyeen forests until 1864, the difficulties connected with the proper control of the work in that locality, necessitating delay until the executive establishment could be strengthened. The practice had prevailed of authorizing the Karens from time to time, to kill a certain number of trees but, owing to absence of control, the number thus killed could not be definitely ascertained. Girdling operations in Thoungyeen District.

According to the orders given in 1858, a maximum of 9100 trees were to have been then girdled, having a minimun girth of 7 feet 6 inches; but a large proportion of undersized trees were girdled, and the operation was carried on till the next dry season. The Karens, upon whom the whole work of extraction devolved, were dissatisfied with the rates of payment, which offered no inducement to remove the larger timber, and many of them, finding it more remunerative to work on the Shan side of the frontier, commenced to withdraw to that quarter.

Amalgamation of Kadoe Revenue establishment with Forest Department.

21. In 1864 the Kadoe Timber Revenue Establishment was amalgamated with that of the Forest Department, and an Assistant Conservator, placed in charge of the Revenue Station, which had hitherto been under the control of the Civil authorities. Rules were sanctioned by the Chief Commissioner as a temporary measure for the management of the Revenue Station, and these were subsequently embodied in the Forest Rules drawn up under Act VII of 1865. Under these Rules duty continued to be levied at the Revenue Station, on all timber passing down the Salween river, whether of British or Foreign origin, the duty being considered a local tax deemed necessary for the maintenance of a system of control, which secured protection to Timber in transit, and the Trade generally.

Girdling entrusted to the Karen in the Thoungyeen.

22. Consequent on the want of the necessary controlling establishment, girdling operations were again entrusted to the Karens in the Thoungyeen Forests in 1864. The work was inspected the following year, and a total of 7161 trees found to have been girdled; but instead of one in four of the I class trees, the girdled trees represented from 25 to 50 per cent, of the I class trees in the tracts selected for the work.

Six years' leases issued for Upper Salween Forest.

23. In 1865, owing to the difficulties connected with the protection, killing and extraction of Teak in the upper Salween Forests, which are to a great extent situated on steep precipitous slopes, contiguous to the frontier, Government sanctioned the issue of 6 years Leases for these Forests, with the right to girdle all trees of a minimum girth of 5 feet, measured at 6 feet from the ground.

Attaran thirty years' permits.

24. The following year, in accordance with the orders of the Government of India, permits of 30 years duration, were issued to all holders of licenses in the Attaran Forests, who satisfactorily proved their claims. It was left optional with them to purchase their respective Forest Holdings, at Rs. 2/8 per acre, fee simple; but none elected to do so. The permits thus issued provided for payment of duty as heretofore, and fixed a minimum girth of 7 feet 6 inches measured at 6 feet from the ground, for all timber felled or removed. These permits are transferable, but at the end of 30 years the Forests are to revert to Government. In all, 21 such leases were issued, and in the case of one holding, it having been proved that a 99 years' lease had been issued in 1829, the holder was left in undisturbed possession.

Demarcation of State Reserves.

25. The demarcation of the following tracts as State Reserves, was sanctioned in Notification No. 953-31 F, dated 16th February 1871.

Yoonzaleen District.	Sinzway ...	8960 acres
	Moo Choung ...	2200
	Wamoo Choung ...	1760
	Total.	12,920

But in Notification No. 2192-28 F, dated 7th August 1873, the Local Government directed the Moo Choung reserve, to be thrown open consequent upon a representation from the Assistant Commissioner, Pahpoon, that the ground was required for the use of that rapidly increasing settlement.

Obstructions in Houndraw river removed

26. In 1873-74 the upper Houndraw Forests were examined and the series of large obstructions known as the Kozai Kogyoon, or 99 islands, opened up by blasting, for the passage of timber from the sources of the Houndraw river.

Extraction of Thitka and Thitkadoe

27. The extraction of Thitka and Thitkadoe by the Forest Department commenced in 1873, consequent on a sudden demand springing up for these species for trial shipment to Europe.

Tavoy Thingan Forests examined.

28. The extraction of Thingan wood (*Hopea Sp.*) from the Tavoy and Mergui Forests, having attracted considerable attention at this time, the Tavoy

Forests, and a portion of the Mergui Forests. were also examined with reference to their resources in Thingan, Thitka and Thitkadoe.

29. In 1875 the examination of the Mergui Forests was continued, and in the following year the Tavoy and Mergui Districts, were constituted a separate Divisional charge. Mergui Forests examined.

30. An Assistant Conservator, with a small establishment was placed in charge, with a view chiefly to bring to notice and develop the resources of these Districts. Mergui Forests constituted a forest charge.

II. Forest Legislation.

31. The earlier measures relating to the Tenasserim Forests and dating back to 1829, have been noted above and those of subsequent importance may be enumerated, as commencing with the Act of Indemnification in 1869. Review of previous Legislation. Act of indemnification.

An action having been instituted against the officer in charge at Kadoe, in the Recorder's Court, Maulmain, for the recovery of certain duty on Foreign timber, the Supreme Government passed an Act of indemnification viz. Act VII of 1869, which gave validity to the Rules in force.

32. In Notification No. 5. F. dated 31st March 1873, the following rates of duty were prescribed by the Local Government on the authority of Act XIII of 1873, and with the sanction of the Governor General in Council, for all timber imported into British Territory : Ad valorem system of assessment.

		Ad valorem.
(1.)	Teak and Thingan	7 per cent.
(2.)	On other white or yellow woods	6 do
(3.)	Thitkadoe, ("*Cedrela Toona*")Thitka ("*Pentace Burmanica*") Padouk ("*Pterocarpus*") and all other red and brown woods	7 do
(4.)	Black, mottled or zebra wood	7 do

33. In the same year under Notification No. 32 of 2nd June, Thitka and Thitkadoe were declared reserved trees, throughout the limits of the Government Forests. Thitka and Thitakadoe reserved

34. In 1876 (Notification No. 33 of 8th March,) the following trees were added to the list of reserved Trees ; Twelve additional trees reserved

(1.)	Thingan	(7.)	Engyin
(2.)	Thitsee	(8.)	Theya
(3.)	Ko Koh	(9.)	Eng
(4.)	Pyinkadoe	(10.)	Pyimma
(5.)	Padouk	(11.)	Kanyin
(6.)	Anan	(12.)	Sha

but subject to the issue of free and trade permits, regarding which rules were promulgated in Notification No. 34 of same date.

35. In Notification No. 49, of 30th March 1876, the Upper Salween Forests, the Forests on the West face of the Donat range, and at the sources of the Houndraw, as well as those in the Tavoy and Mergui Districts, were declared to be subject to the provisions of Act VII of 1865, and in Notification No. 50, of the same date, Rules were promulgated for the management and preservation of these Forests. Additional areas brought under provisions of Act VII of 1865.

36. In Notification No. 56 F. dated 6th April 1876, the undermentioned areas were declared subject to the provisions of Act VII of 1865, and of the Forest Rules published in Notification No. 50, of 30th March 1876. Forest Legislation during the past year.

(1) Koloon Island—Salween river.

(2) Pandau Forest comprehended within the following limits:

North.—Hongheng Choung.

East.—The Pandau Hills.

South.—Gyo Choung from the Tseewak-choo Choung upwards.

West.—Straight line from the mouth of the Tseewak-Choo Choung, to the mouth of the Hongheng Choung.

FIRST PART :—SPECIAL.

I. State Forests.

No increase in area of State forests.

37. No increase has to be recorded in the area of the State Forests which are limited to those sanctioned in 1871 :—

Yoonzaleen District	Sinzway	14	Square miles.
	Wamoo Choung	2·75	do do.

Proposals for reservation.

38. During the year proposals were submitted for the reservation of the following Tracts :—

Civil District	*Forest District*	*Name of Tract.*	*Area in Square miles*
(1) Amherst	Doomdamee	Tagayloung	9
(2) Shwaygyeen	do	Beelakatgyee	13
(3) Shwaygyeen	do	Oangkagyee	13
(4) Amherst	Attaran	North Dalee	12
			47

Certain areas surveyed and mapped preparatory to submitting proposals for reservation.

39. At the close of the year the necessary surveys and maps were completed for the following areas, for which proposals for reservation were about to be submitted.

Civil District	*Forest Disirict*	*Name of Tract*	*Approximate area, Square miles.*
(5) Pahpoon	Beeling	Maiwyne	13
(6) do	do	Mainanway	6
(7) do	Yoonzaleen	Teepahdo	14
(8) Amherst	Attaran	Natchoung	9·5
(9) do	do	Goongyee	28·5
(10) do	do	Upper Zammee	23·5
(11) do	do	Kroonkawoon	18
(12) do	do	Thinganneenoung	6
(13) do	do	Mekkanan	8
(14) do	do	Mohoo	26
(15) do	do	Pakaboh	18
			170·5

Demarcation of proposed Reserves.

Demarcation of boundaries of proposed reserves.

40. With the approval of the Civil Officers, and in anticipation of final sanction, the boundaries of the following tracts proposed for reservation in the Salween Division, were demarcated as laid down in Rule XIV of the Forest Rules of 1865.

		Approximate area, square miles.
Forest district Doomdamee.	(1) Tagayloung	9
	(2) Beelakatgyee	13
	(3) Oangkagyee	13

Where artificial boundaries had to be followed, lines 10 to 15 feet broad were cleared of all vegetation, and boundary marks affixed to trees not more than 200 yards apart The boundary marks consisted of teak boards having a serial number and the word "Assoya" in white paint. The work when brought to a close in March, was examined by the Conservator and found to have been satisfactorily executed.

41. The boundaries were also demarcated of the proposed Dalee Reserve, 12 square miles in the Attaran district, and some of the boundary marks affixed where pathways cross the boundaries.

In the case of this and the Doomdamee proposed Reserves, the expenditure incurred has not yet been ascertained.

Survey and examination of Forests with reference to reservation.

Examination of the Attaran district.

42. Early in the season, Mr. Nepean was deputed to the examination of the teak localities drained by the Zammee, the Eastern branch of the Attaran river, and somewhat later (February) after a party had been organized by the Conservator and the necessary instructions given, the work on the Winyeo side of the Attaran was delegated to Mr. Bingham.

Teak localities.

43. The Attaran teak localities differ considerably from those in other parts of the Province. Extensive and well defined belts are rarely met with, and they may be said to consist chiefly of small detached groups and patches, only a few acres in extent, on level and undulating ground.

Selection of reserves difficult.

44. The license or grant system having long ago caused the removal of all timber of marketable size and quality, considerable difficulty was experienced

in the selection of Tracts deemed suitable for reservation, and in most instances, selection could only be based upon the quality of soil, numerous large stumps, and growth of young trees. Selection was also made with due regard to facilities for transport of timber, the presence of natural fire resisting boundaries, and the existence of other valuable species, such as Padouk, (*Pterocarpus dalbergioides*) Pymma, (*Lagerstrœmia regina*) Thingan, (*Hopea Sp.*) and Thitka, (*Pentace Burmanica*).

45. Although the population is still sparse, yet the villages, comprising often only 3 or 4 houses, are numerous in places, particularly in the vicinity of some of the teak localities on the Zammee river. Where they were of a more or less permanent character, and depended partly upon wet cultivation, the villages were excluded, but owing to the rearing of buffaloes, in which many of the people are engaged, these villages cannot but be affected somewhat directly by Forest reservation in their vicinity, it being the custom to let the buffaloes loose in the surrounding Forest throughout the dry season, and to herd them only during the monsoon. Population sparse.

46. Where it was practicable, Linear Valuation Surveys were held, the results of which will be found recorded in Statement I. Linear surveys.

47. With a few exceptions, chiefly isolated Tracts of little value, all the teak localities were carefully examined throughout the Attaran District, and the work on the Zammee side was not brought to a close till late in April. Extent of the examination.

48. The results of the work have been the selection as Reserves of the several areas noted in para 39 and aggregating 137·5 square miles in extent. Results of the work.

The Dalee Reserve was selected by the Conservator prior to the commencement of the work of the season and including this Reserve the total area selected in the Attaran amounts to 149 square miles.

49. The Beeling District was examined by the Conservator with special reference to the reservation of the Maiwyne Forests, which constitute the principal Teak localities of this District. Boundaries had been selected by Moung Poh O, the late Assistant Conservator, and a map also compiled, but there had been no opportunity of revising his work. There are numerous Karen hamlets in close proximity to the Teak Tracts, but with the exception of 3 temporary villages just within the boundaries now selected, it has been possible to exclude them all, and yet include all the Teak Tracts. Examination of the Beeling District.

50. Although considerable areas in this locality are protected by the Karens in the course of protecting their toungyahs, yet the Teak localities here have suffered considerably from the annual fires. Tracts injured by fire.

51. The Conservator also examined the Teak localities on the Lhagonebyoo and Phawa streams ,and the Tract between the Mainanway stream and the Beeling river, and finally selected for reservation the last named Tract, in which the Karens had satisfactorily started experimental cultivation of Teak in 1874. The Phawa and Mainanway Tracts.

52. The examination of this District by the Conservator had reference to the reservation of a large Tract of evergreen and moist Forest, situated in the vicinity of the Teepahdo, a feeder of the Kanyindoong stream, and drained partly by some minor feeders of the Yoonzaleen, in the vicinity of the Hatkyee or great rapid. A considerable quantity of Thitka (*Pentace Burmanica*) has been extracted from these Forests by Government Contractors, but large areas remain untouched and unknown, the evergreen Forests here being particularly dense and in places almost impenetrable, by reason of an undergrowth of canes. Thitka which has hitherto been believed to affect only the borders of the evergreen Forests, is here found within as well as on the limits of the evergreen Forests. Examination of the Yoonzaleen District.

In the localities recently worked, young Thitka trees of 1½ to 2 feet girth were observed of excellent growth, the stems being tall and clear of branches to a height of 30 to 40 feet. The Tract possesses also considerable resources in Thingan, *(Hopea Sp.)* and other species common to the evergreen Forests. Many portions of it need protection, as the bamboo having flowered over considerable

areas here, the Karens have commenced extending their toungya cultivation into the evergreen Forest. Mr. Bingham, who was afterwards deputed to this Tract, observed valuable Thitka trees in some of the toungya clearings.

MANAGEMENT AND IMPROVEMENT OF STATE FORESTS.

I. Improvement.

Examination of Sinzway Reserve with reference to natural reproduction.

Teak seedlings scarce.

Dense growth of bamboo.

Other seedlings abundant.

53. The Sinzway Reserve was examined by the Conservator in December, and again in March with reference to the natural reproduction of Teak. In proximity to the main road, which runs through the Reserve, small seedlings were observed in some profusion in places, but elsewhere only one here and there could be found at great distances apart. The cause of this was undoubtedly the dense undergrowth of bamboo, which, since the successful exclusion of fire from this Reserve in 1871, has grown in such luxuriance as to give a totally different aspect to the greater portion of the Teak Forest. The Forest had a fresh and green appearance, and in the more open spots there was no decrease in grasses and herbaceous plants.

Seedlings of Zimbyoon *(Dillenia Aurea)* Letpan (*Bombax Malabaricum*) and other common species were abundant.

No apparent alteration in soil

54. Although the soil must have improved, no marked change could be detected in it, and, if humus is forming, there is reason to believe that it will be an almost imperceptible process in these deciduous Forests, where everything on the surface after being reduced to the consistency of tinder, in the hot season, is liable to be washed away into the hollows and ravines, by the first heavy tropical showers which usher in the monsoon.

Healthier condition of younger Teak.

55. It was however satisfactory to note an absence of injury to teak trees by fire, and the generally healthier appearance of the younger trees. In respect to natural reproduction of teak it is evident that until the bamboo flowers, no improvement can take place unless clearings are made to admit more light.

Work of improvement.

56. As a commencement arrangements were made to girdle 1,000 trees of other kinds, in too close proximity to teak and sow teak seed on lines 12 feet broad cleared for the purpose, also to have all seedlings cleared and creepers cut. The work was satisfactorily executed by Mr. Bingham and may be thus summarized.

The Forest having been divided into five separate blocks having natural boundaries, the work was carried on consecutively in each, chiefly with the aid of Shan coolies obtained from Pahpoon, the Karens being occupied with their toungyas and fire traces. The results were :

Trees of other kinds girdled	1020
Creepers cut	251
Seedlings cleared	83

In Block No. 2, bounded by the Wakolo Choung on the North, the Shoke Choung on the West, the Kanyindoong road on South, and Sinzway Choung on East, the following lines were cleared and sown with Teak seed :—9 lines about 20 feet broad running East and West, and aggregating in total length 5 miles, 4,900 feet.

The quantity of selected Teak seed sown was 20 baskets, and the expenditure incurred in the whole work Rs. 613-4, inclusive of pay of Forest peons and boat hire to the forest and back.

II. Protection against fires.

Fire in the Sinzway Reserve.

57. Although large additional areas have been successfully fire-traced this season in the Salween Division, the Deputy Conservator has had to report the accidental burning of the greater part of the Sinzway Reserve, a few days after the close of the official year.

Mr. Slym refers to it thus :—" The Sinzway Reserve caught fire between " the 3rd and 10th April from the firing of the toungya clearings prepared for " Teak cultivation, there being then a very high and strong wind which blew " the fire about and ignited the Forest in several places simultaneously.

" All efforts to stop its progress on the part of the Karens proved unsuccessful.

" Fires have been kept out of this Reserve for seven successive years, but " from the recent examination of the Tract before it was burnt, it was quite " evident that, instead of proving beneficial, their exclusion had done a deal of " harm to natural reproduction, as, after a long and careful search by Mr. Bingham " and his party, only 83 seedlings could be found.

" The Forest has become a confused mass of vegetation in which it is impos- " sible for young Teak to thrive. So far, it will be observed, the fire has not done " much harm in that respect but it has done injury to the younger trees in some " of the toungya plantations. This has been already remedied by having them " cut back close to the ground so as to secure the springing up of fresh and " straight shoots from the roots."

58. The report that the fires originated from the firing of the toungyas was corroborated by Mr. Bingham who had been temporarily called away from the Reserve to prosecute certain cases in the Pahpoon Court, but returned on 10th April in time to find the Forest on fire. He states:—" In all cases the Karens " did their best to put out the fires and were out day and night for that purpose, " but what could a few men do against a fire aided by a strong breeze and run- " ning through the accumulated leaves and fallen trees of six years ?" Origin of the fire.

59. It is true that, owing to defective reproduction, there were but few seedlings to be destroyed, but it may be expected that a large number of young Teak saplings have been more or less injured by the conflagration. Injury to young timber.

60. The experience gained by it however is valuable, and particularly so, now that fire-tracing of numerous additional large areas is being taken in hand. It shows that however well disposed the Karen population may be, and whatever natural fire-resisting boundaries a Tract may possess, the system hitherto pursued in the Salween Division, of entrusting the work of protection wholly to these people under a Karen Head-man of influence, is not to be depended upon, and that, in future, more direct measures must be adopted, and additional expenditure incurred. As a rule, the fire-traces around the toungya clearings are far too narrow, the Karens trusting chiefly to their ability to suppress a conflagration by beating it out with branches and plantain stems, and pouring water on smouldering logs, an undertaking in which the whole village, including women and children, assists. Conclusion to be arrived at.

61. In future two broad fire-traces, an inner and outer one, will have to be formed around each toungya or block of toungyas intended for planting, and the entire Reserve will also have to be intersected with broad fire-traces with a view to isolate any fire that may take place. Measures to be adopted in future.

62. There has been much sickness and heavy mortality among the Karens in the Sinzway Reserve during the past year and a large number were at one time disposed to shift elsewhere. Sickness in the Reserve.

63. They occupy at present 3 small hamlets situated just within the North, East, and West boundaries, and number in all about 20 families. The Reserve has been protected hitherto by a broad fire-trace on the south side, the Yoonzaleen river on the East, and watchers and patrols on the north and west where there are numerous Karen villages, the people of which are responsible that no fire passes out of or crosses their toungya grounds. The expenditure incurred annually in payments to the Karens has been about Rs. 60, and total expenditure up to date, Rs. 180. For the first three years no remuneration was solicited by the Head-man who is the goungwai in charge. Sites of villages; and measures adopted for fire protection.

64. The following additional areas were successfully protected during the year within the following Tracts proposed for reservation. Additional area protected.

Forest District	*Tract*	*Approximate area, acres.*
Doomdamee	Tugayloung	5120
	Beelakatgyee	5120
	Oangkagyee	7040
Beeling	Maiwyne	8320
	Total	25,600

Fire protection Doomdamee.

65. In the Doomdamee proposed Reserves the work was entrusted to Forest Ranger Shway Yea, at the close of the demarcation work. The season was then too far advanced to admit of fire-traces wider than 150 to 300 feet being formed, the method adopted in most instances being to clear two narrow lines parallel to each other and carefully fire the intermediate space, the lines selected being the boundaries and all main inner pathways. A system of patrolling was also maintained, seven Karens being engaged for that purpose and fire-tracing at Rs. 10 per mensem.

Notwithstanding the late date on which the work commenced, fire was successfully excluded from nearly the whole of the Tagayloung Reserve, and from 11 and 8 square miles respectively of the Oankagyee and Beelakatgyee Reserves.

The expenditure amounted to Rs. 58 for fire-tracing by contract, Rs. 126-7 for pay of watchers, and Rs. 114-8 for one elephant for carriage purposes and bringing in a daily supply of water, or a total expenditure of Rs. 298-15.

Protection of the Beeling Maiwyne proposed Reserve.

66. The protection of the Beeling Maiwyne proposed Reserve was successfully accomplished by Sawcay Shway Hpoo, Karen Goungwai, recently appointed to the charge of these Forests. An attempt made by him to protect a Teak Tract on the Phawa Choung partly failed, half of the Tract being overrun by fire originated near the Pahpoon high road, but the isolated Teak Tracts on either side of the Maiwyne stream to the North of the proposed Beeling Maiwyne Reserve, were successfully protected.

The Headmen to be rewarded.

67. It is intended to reward the Headmen of several villages adjacent to the proposed Reserve, as immunity from fire was due to their influence as well as that of the Goungwai, in checking the firing of the Forests for game and preventing the spread of fire from toungya clearings.

The entire population on these Hills is Karen, and, except in the vicinity of a high road, fires can only be originated by Karens themselves or a few Burman or Shan pedlars, but the latter are perfectly aware that their movements are too well known to the Karens to admit of their escaping detection, should they set fire to the Forests.

Wamoo Choung Reserve successfully protected. Total area protected.

68. The Wamoo Choung Reserve, 2·75 square miles in extent, near Pahpoon, was successfully protected from fire by the Forester in charge, thereby making the total area protected this past season up to 27,360 acres or 16,640 acres in excess of the area of last year. The results of the season's protective measures would have been very satisfactory but for the accident in the Sinzway Reserve.

Improvement anticipated.

69. As an Officer is shortly to be posted to the charge of the West Salween Division with Head quarters at Pahpoon, better results may confidently be expected in future in this important work of the Department, all control measures having hitherto been directed from Moulmein which is much too distant for that purpose ; and particularly when the Divisional Officer is never in a position to visit the Forests in person.

III. Toungya Teak Plantations.

Teak cultivation in Sinzway Reserve.

70. The area brought under cultivation by the Karens in the Sinzway reserve in 1876 was 79 acres. Owing to a short supply of seed and the somewhat late date when some of it could be sown, some of the Plantations are very thinly stocked; the average over the whole being ascertained to be 165 plants to the acre.

The expenditure incurred on the past year's Plantation including cost of seed and Capitation Tax, amounts to Rs. 580-8-0 equivalent to Rs. 7-5 per acre.

Former Teak Plantations Sinzway Reserve.

71. In appendix A will be found full particulars regarding previous expenditure and the results of a counting which took place this season of the Teak seedlings and young trees in all the Toungya Plantations in this reserve, and covering an area of 253·17 acres.

The total number counted was 42,866, which gives an average of 169 seedlings and young trees to the acre.

The cost up to date of the 1876-77 plantation, including Rs. 55 expended on clearing some of the older Plantations this season, is Rs. 635-8, equivalent to Rs. 8 per acre.

Teak cultivation in North Dalee Reserve.

72. A commencement has been made in Teak planting in the proposed North Dalee Reserve ; the arrangements had been concluded prior to the receipt of Government orders directing that such work was only to be undertaken in

Reserves which had been protected from fire three or four seasons. The area cleared and sown by Toungya cultivators at the close of the year under review is, however, only about 20 acres.

Protection.

73. No cases have been reported of Breaches of Rule XIII in either the Sinzway or Wamoo Choung Reserves *in the Salween Division.*

No breaches of rules in Forest Reserves.

74. These Reserves are not burdened with any rights of Toungya cultivation or rights of usage of any description whatever, and on this subject it was deemed necessary to address the Local Government in letter No. 411-1 of 21st February 1877, with a view to correct some erroneous statements made in a report submitted in September 1876, and in paras 4 and 9 of the Progress Report for 1875-76, in which the Salween as well as many other Reserves are omitted from the list of Reserves free from rights and privileges.

Reserves free from all rights.

REQUIREMENTS OF THE SURROUNDING POPULATION.

75. The wants of the people in the vicinity of the State Reserves continue as hitherto to be met entirely by the produce of the unreserved Forests. The area of the latter in the Salween District, in which the State Reserves are situate, is very extensive ; but if the enormous areas subjected to Toungya cultivation and occupied almost wholly by bamboo jungle, are deducted, the real Forest area will be found to be much diminished and limited to a few Tracts both on the level ground and on the crests of the Hills where the soil is unsuitable for cultivation.

Requirements met out of the unreserved Forests.

The population however, being almost wholly Karen, their requirements are very few, and limited to chiefly bamboo, thatch grass, and small timber for house posts.

SECTION II.

UNRESERVED OR DISTRICT FORESTS.

I, Area, boundaries &c.

76. No changes have taken place in the area and boundaries of the Unreserved Forests beyond what may have resulted from the increase of permanent cultivation. Two small areas, viz., Koloon Island and the Pandaw Forests, as already noted in para. 36 have been made subject to the provisions of the Forest Rules promulgated in Notification No. 50 of 30th March 1876.

No changes in area &c.

77 At present large areas remain excluded from the provisions of Act VII of 1865 although abounding in valuable trees of the reserved kinds. This is owing to the boundaries proposed for the additional areas, and subsequently notified in Notification No. 49 of 30th March 1876, not having been altered on the promulgation of Notification No. 33 of 8th March 1876, reserving 12 additional kinds of trees, the boundaries having been selected only with reference to the conservancy of Teak, Thitka, Thitkado, Thingan and Kanyin. Proposals were consequently submitted to the Local Government for having the provisions of the Act extended to the whole of the Tenasserim Division.

Large areas not included within Government Forests.

It may be noted here that the Deputy Commissioner Mergui, is in favor of this measure.

2. *Requirements of the population.*

78. With the exception of Teak, Thitka and Thitkado, all timber as well as Forest produce other than the yield of the 12 kinds of trees reserved in Notification No. 33, of 8th March 1876, has continued to be free for the use of the people.

All timber except teak and reserved kinds free.

79. Although the timber of these 12 kinds is available for the use of the people near the Forests under Free Permits issued by the Civil authorities, yet it is found that the inconvenience connected with obtaining Permits, has in many localities induced the people to use to a great extent other woods as yet unreserved.

People led to use other woods.

80. The rates also which were (arbitrarily) fixed for timber of the 12 reserved kinds when disposed of under Trade Permits, have been found in certain Districts to be almost prohibitive in their effects.

Rates of payment for reserved woods prohibitive in effect.

Proposed to adopt running foot method of assessment.

81. The system also of assessing the duty according to cubical contents is quite unintelligible to the mass of the population who naturally look with suspicion on it.

The "running foot" system of assessment, according to girth, being much more satisfactory, this, as well as the necessity for modifying the rates, has been brought to the notice of the Local Government.

Timber of reserved kinds granted on Free Permits Salween Division.

82. During the year the quantity of timber of the 12 reserved kinds for which Free Permits were issued in the Salween Division, amounted to 8433 logs chiefly of Pynkado (*Xylia dolabriformis*), Pyimma (*Lagerstroemia regina*), and Eng (*Dipterocarpus tuberculatus*). This figure includes also 31 logs of Thitkado (*Cedrela toona*), but the issue of Free Permits for such timber was doubtless the result of an oversight by the civil authorities.

Free Permits Mergui District.

83. The quantity granted on free Permits in the Mergui District was 657 logs chiefly of Thingan.

Notification relating to reserved woods delayed in Tavoy District.

84. In the Tavoy District, owing to a reference which the Deputy Commissionor deemed it necessary to make in the first instance, the Notification relating to the 12 kinds of trees was not promulgated till 24th October. The people, however, having heard of it from other sources proceeded to lay in a large stock of timber of all kinds, enough almost to meet a whole year's consumption.

Collection of wood oil in Tavoy and Mergui Districts.

85. In the Tavoy and the Mergui Districts the right to collect wood-oil, the produce of one of the reserved species, Kanyin, (*Dipterocarpus alatus,*) is farmed out or granted over definite areas to certain individuals, but elsewhere, in the Salween Division, such a system has not yet been possible of adoption and consequently the people over large areas continue to help themselves to wood-oil. The population is, however scarce, and wood-oil trees are generally abundant, and furthermore the demand at Moulmein is met entirely by oil imported by sea from Mergui and Tavoy.

Protective measures deemed necessary.

86. Whether the people of the Forest Districts are allowed to help themselves to their requirements in the matter of oil, or whether eventually a system of farming out the right to collect such oil can be introduced, some restrictive measures are called for in order to regulate the tapping of the trees and preserve them by having close periods, if the practice of applying fire cannot be put a stop to.

On this subject also the Local Government has been addressed and certain proposals have been submitted.

3 *Protection.*

Forests inspected.

87. The Attaran Forests, and portions of the Beeling, Doomdamee and Yoonzaleen Forests, were visited by various officers of the Department. The Thoungyeen and Upper Salween Districts were also visited, the former by two, and the latter by one Forest Ranger. The only breaches of Forest Rules discovered were:

Breaches of Rules discovered.

88. (1) Two teak trees III. class discovered by Mr. Nepean to have been felled in the Nat Choung Forest, and one reported by Mr. Bingham as felled in the Winyeo Forest, Attaran District.

(2) Nine Teak Trees I. class, felled green, by Departmental Contractors in the III. Division, (Maitharouk Forest) Upper Salween Forest. This latter case is still under investigation, but in the former the parties concerned have not been discovered.

Forest subordinates convicted of extortion.

89. In the Beeling Forests, Goungwai, Gna Twoon, lately lppointed to this District, was discovered by the Conservator to have extorted money under various pretences from the Karens. A similar offence was found to have been committed by an individual temporarily employed as a Forester in the Yoonzaleen, last year, money being extorted under threat of reporting the felling of Pyinkadoe trees in toungya clearings.

Both individuals were prosecuted by Mr. Bingham in the Deputy Commissioner's Court at Pahpoon, and sentenced respectively to 7 months' and 1 year's rigorous imprisonment.

90. During the year some breaches of the rules relating to Free and Trade Permits for different kinds of timber were discovered by the Amherst and Yay Foresters. These cases, as well as one, discovered by Mr. Slym, of selling timber obtained under a Free Permit, were all duly reported to the Deputy Commissioner, but the result has not yet been ascertained. Breaches of rules relating to Free and Trade Permits.

Five cases of breaches of such Rules were discovered by Mr. Overseer Lee at Mergui and a confiscation order obtained for 8 logs of Thingan.

At Tavoy, the Depôt Goung reported, late in the year, numerous cases of timber imported from the Forests without permits. In most of the cases the parties concerned were dismissed by the Deputy Commissioner with a caution or on payment of duty, the Rules having been promulgated so late.

91. There has been a considerable increase in offences connected with drift Teak timber on the Salween river, which Mr. Slym, the Deputy Conservator of Forests, in charge of the Revenue Station, attributes to the defects in the present Rules and considers as proof of the urgent need for adopting the more direct and stronger measures provided for in the proposed Rules still under consideration. Offences connected with Drift timber on the increase.

92. During the year 24 cases, including 25 persons, were tried for breaches of the Timber Revenue Rules and other Criminal offences connected with timber. Cases tried.

Of these 25 persons, one was acquitted, 17 were fined and had their timber detained ; of one person, 10 logs were at once confiscated, 3 persons, had their timber detained and suffered either simple or rigorous imprisonment, and four persons had their timber detained only,

93. The increase in cases tried by the Deputy Conservator is shewn as follows. The increase in crime over and above offences of previous year.

	1875-76	1876-77
Number of cases ...	20	24
Number of Persons ...	24	25
Persons fined ...	14	17
Imprisoned ...	1	3
Acquitted ...	6	1
Total of fines ...	Rs. 520	Rs. 531
Logs detained and confiscated	54	255

94. There were 15 cases of breach of Rule 3, Schedule VII, or filing incorrect reports, which is double the number noted in the previous year. Mr. Slym states:—" These incorrect reports are wilfully made by parties who deal in dishonestly obtained timber, and consequently will not report any mark but what has been affixed to the timber by themselves or their confederates. Filing incorrect reports.

95. " In former years I tried to prosecute such offenders for being in pos-" " session of stolen property, but with ill-success, as the Courts demanded not only" " proof that the property was stolen and in their possession, but also that the ac-" " cused were aware of it being stolen property.". Measures adopted to check such offences.

" This latter being an impossibility, I had to drop these prosecutions and" " avail myself of the Forest Rules under which a mild kind of punishment only" " could be inflicted. That the bad characters do not care for the punishment" " now administered is shewn by the increase in offences connected with timber" " on the Salween river, and it is for this reason that I have for years urged an in-" " crease in the penalties laid down under Rules XXXV, chapter V, of the Forest" " Rules.

" There was one exceptional case this year in which the fraud was so glaring" " that I stayed proceedings and submitted the same under Section 45 of the" " Criminal Procedure Code to the District Magistrate for trial."

" I was however directed to try the case and pass sentence under section 403 of the Indian Penal Code."

One case of theft of timber, from the Battery Point Depôt, was prosecuted by Mr. Slym in the Magistrates' Court and resulted in the accused being convicted and sentenced to two years' rigorous imprisonment, which sentence was confirmed on appeal by the higher Court.

Peons about to be stationed to check the defacing of marks on timber.

96. Until the proposed Rules come into force, arrangements will be made to have a peon stationed at the principal villages where the defacing and erasing of marks on timber are carried on.

Upper part of the Salween unprotected.

97. The upper part of the river above the Hatkyee, or the great rapid, will however, remain unprotected, and it is there that such practices are usually carried on during the dry season when the lowness of the water admits of a large quantity of neaped timber being manipulated by thieves.

Defacing of marks attended with risks.

98. That such an occupation is attended with some risks is evidenced by the discovery last dry season of three human bodies among a heap of timber, the remains evidently of timber thieves who, while in the act of moving a certain log suited for their purpose, caused the whole pile to fall upon themselves

Proposals made for creation of two new Forest Divisions for the more efficient control of the Forests.

99. To insure more efficient and direct control over the Forests and floating streams at a distance from Moulmein, proposals were submitted to the Local Government for the creation of two new Forest Divisions, one East and the other West of the Salween river, with head-quarters respectively at Kawkayeet and Pahpoon.

The Officer stationed at the latter place will doubtless be in a position to check to some extent the evil practices now carried on in the Upper Salween.

4 *Management and Improvement: Girdling Operations.*

Girdling suspended.

100. In accordance with the orders of Government, girdling operations have been altogether suspended in the Salween Division.

Should the measures instituted this year to assist natural reproduction prove successful in the Sinzway Reserve, a considerable number of I class Teak trees will be available for removal in the course of two or three years.

Examination of Forests.

Examination of Islands of Mergui Archipelago.

101. During the past dry season Mr. Overseer Lee was deputed to the examination of the larger Islands of the Mergui Archipelago with reference to the Forest produce reported as extracted in large quantities by the Selungs, Malays and Chinese.

From his report which is exceedingly interesting and given in extenso below, it will be seen that several thousand Akyaw trees believed to be the "Kayu garu" of the Malays, or "Aquillaria Agollocha," are being annually felled for the fragrant wood which is found to a small extent in many trees of this species.

Protection of the Akyaw tree recommended.

102. The protective measure recommended by Mr. Lee appears to be the only one possible of adoption under present circumstances and proposals to that effec- are about to be submitted.

Report on the Islands in the Mergui Archipelago, the Akyaw Tree, Minor Forest Produce &c. by Mr. J. Lee.

Conservator's Instructions.

103. Prior to visiting the Islands in the Mergui Archipelago, the instructions received from the Conservator of Forests, British Burma, were to obtain information and furnish particulars respecting:

1st. The position of the Islands and any data relating thereto.

2nd. Description and approximate quantity of Forest Produce removed therefrom.

3rd. To what markets the same is removed.

4th. To gain all information possible respecting the tree or trees from which the Akyaw is extracted,

5th. Detailed information respecting the extraction of it.

6th. Precise time when the Islands are visited by the collectors of Forest Produce and the time occupied by them.

7th. Their numbers, and from whence coming.

8th. If they prove to be parties from beyond the Frontier: whether others residing within British territory would be disposed to collect such Produce if protected by Government.

9th. The measures best calculated to check illicit collection of Forest Produce.

10th. The probable cost of such protection.

11th. To visit the localities whence supplies of reserved woods have hitherto been obtained for the Mergui market in order to make sure that all felling except on the part of parties duly authorized, has ceased, as well as all handling and dragging of timber.

104. 1st. The Mergui Archipelago comprises upwards of two thousand Islands, which vary in size from a tiny insular plot scarcely entitled to the name, to that of a broad tract of land upwards of 30 miles in length. They extend from about 9° 10" to 13° 10" North Latitude. General description of Mergui Archipelago.

From the number and extent of these Islands it will be evident that a few only of them could be visited and that rough sketches are all that can be furnished even of this number.

Particulars therefore, are given of the largest ones between Mergui and Mallawoon all of which are in a line running nearly North and South and about equi-distant from the mainland; few of importance being seaward of them.

105. Independent of the following Islands, a previous knowledge of a few others might be given; but this is useless, as the similarity is so great between them that it would lead only to tautology without any useful result. Many Islands very similar: hence a reference to larger ones will suffice.

Islands.	Distance in Miles from	Length in Miles.	Width in Miles.	Approximate area in Square Miles.
St. Mathew's.....	Mallawoon 40 Victoria Point 18	19	5	95
St. Luke's.....	Mallawoon 45 Victoria Point 23	12	3	36
Lampee.....	Kra thoo ree 20 Bowpin	32	3	96
Domel or Yai Aye.....	Bowpin 36 Laynya 40	24	5	120
Kitthareng.....	Bowpin 24 Laynya 16	19	10	190
King's.....	Mergui 14	26	8	208
Tavoy.....	Mergui 39 Tavoy 60	20	22	50

106. These distances have been computed from Lieut. Bagge's map and judging roughly from travelling over many of them at one time or another, they are tolerably correct. In order to give an approximate idea of the size, the areas have been computed on the assumption that the Islands are level. Owing to the numerous Hills the actual area of most of them would exceed the above by more than ten fold. Distance of Islands from mainland and extent.

107. On King's Island there are a number of Burmese and Karen settlers who cultivate paddy and vegetables and have Doorian, Mangosteen and Plantain gardens, but, with the exception of this, of Tavoy Island, and of two or three small ones, near the mainland, the whole of the Archipelago is uninhabited expect by the wandering tribe of Selungs, and by the fishermen who spend the dry season only on a few of them. Kings Island.

On the Eastern side of some of the Islands in the vicinity of Mergui, there is usually a little level country which is generally very low and covered with Mangrove trees, whilst on the Western shores where, owing to the boisterous waves, no debris can get a resting place, the Islands partake more of the character of those in the South. A little beyond these a great change is manifest. The Mangrove Swamps disappear. Hills and narrow valleys with scarcely any level land are features peculiar to these Islands. Rocks of laterite or sandstone form the coast line whilst in narrow belts an accumulation of sand forms the arcs in the Bays. One important matter connected with most of the principal Islands is that owing to there being deep water in their vicinity the Mail steamers run close to them.

St. Mathews', Lampee, Domel, or Yai Aye, King's and Tavoy Islands, are all close to the route, the latter Island being probably the most distant.

St. Matthew Island.

108. A range of high hills runs about midway from one end of the Island to the other and where the land is very broad there are a few minor ranges varying much in length and altitude. All of these throw off a large number of spurs which run out into the sea and form numerous bays all around the island.

Between these hills and spurs there are neither plains nor broad valleys and consequently no alluvial deposits, and as many of the valleys are so narrow, there is only just room for a streamlet to wind its course and carry away to the Ocean the debris washed down from the hills. With the exception of a few narrow belts or patches, which *sometimes* form the crown of the hills, there is no level land on the Island. Hence the features of the Forest are not of that varied character which hill and plain would give rise to.

Various Trees met with.

109. On most of the Hills there are many familiar faces which are common to elevated land in the the vicinity of Mergui—Gangaw, Kyetmouk and Kadoot are probably the most abundant. The wild clove and the nutmeg tree are plentiful. The Akyaw tree moderately so. A species of Thabyay (*Eugenia*) and Manthin (*Laurus*) are common. The oil trees are abundant in places and seem to affect particular Hills. A species of Mimusops is very general. An Ilex yielding a beautiful close-grained wood is common on a few hills but the plant does not attain a size to make the timber of value. The *Pavetta Indica* grows to double the size it attains near Mergui but is not plentiful, and the *Samadera Indica* which "yields the Niepa bark of commerce" is seen now and then. On a small patch of level land which is not more than a few feet above high-water mark, a few Thingan trees only were seen, and these were growing in company with a few other trees rarely or never seen on any other part of the Island. From excursions made into the Forest and from enquiry instituted amongst the Selungs, this little patch of land appears to be the only place where Thingan grows (i. e. of the same species as that which is used in Mergui).

On a small Island too, a little to the south of St. Mathews', there is a plot of level land, and here also the trees are entirely different to those met with even on slightly elevated land on all the Islands in the immediate vicinity.

Several Sterculias which furnish a wood much like the Sinkozee, are growing close together, the *Canthamum didynum* with its two-winged fruit pendant like ear-rings is met with, and a species of Zebra wood grows on the sandy beach. Several other trees were seen but owing to not meeting with either flowers or fruit no names can be given.

Soil silicious.

110. The soil on St. Mathews' Island generally is somewhat silicious, and from the decomposition of laterite it is usually more or less impregnated with the oxide of iron which gives it a brownish colour. No approach even to a partially pure argillaceous earth is met with.

Granitic rocks are seen, both coarsely granular and fine sandstones are common, a kind of flag slate is met with in places, and diluvial laterite, intersected with narrow veins of quartz is seen on all parts of the Island.

St. Lukes.

111. This is little more than a long spur of St. Mathews' Island with nearly the same features and characters, and there are evident links which show that at no very remote period they have been connected together.

In a few places however the low points of the spurs are of a calcareous nature, and here the stunted growth of the vegetation contrasts unfavorably with the luxuriant growth in the back ground.

Lampee.

112. This is a very extensive and well-wooded Island and there were several species of unknown trees met with which would evidently yield valuable timber. One of these is a tree with verticillate leaves which yields a nice grained timber that would evidently answer well for furniture. It has a closer grain but is much like cedar, and is said to be the same as the "Singapore Red wood" which is sent to Calcutta and Bombay for tea boxes, but this opinion requires confirmation. Here "Maikai" which, in the vicinity of Mergui, is never seen growing in any other place than on the summit of Hills in the midst of rocks and stony places, was met with on level land a few feet above high-water mark.

Twenty two trees were counted and although the site would have led to the belief that they would be of a larger girth than their confreres on the Hills, every one of them had the same fluted trunk and stunted growth which characterize those at a higher elevation.

Near the same place quite a little forest of the *Casuarinas*, Beefwood, or pseuda leafless trees, which look so much like the Fir trees elsewhere, lined the coast and for a short distance inland. In their midst the Nux-Vomica tree, which is rarely met with in these parts—except under cultivation—was seen of an unusally large size. On the Hills, Gangaw is not so plentiful, but Kyetmouk, Kadoot, the oil trees, and a few others are quite as abundant as on St. Mathews' Island.

113. The Akyaw tree is far more generally seen, but this is believed to be owing to less felling having taken place, and not to any superior quality of soil or other agency. On St. Mathews' Island there are but very few canes or creepers and but very little underwood compared with those on this island. The Akyaw Tree.

114. There, the Caoutchouc bearing plants are very seldom seen but here they are tolerably plentiful. The physical features of St. Mathews' Island are reproduced here but in a slightly modified form. The hills are not perpendicular and in places there is low undulating land where the finest Timber trees invariably grow.

115. Proceeding Northward from this Island the Cyclone visited District is entered, and a brief summary of a short visit to a few, added to a previous knowledge of most of these Islands may suffice. Cyclone District.

About 5 years ago a Cyclone approaching from the East or South East swept over a portion of the Archipelago extending from Lampee to Ross' Island, both of these places being only just out of its range.

Every tree exposed to the gale was either blown down or dismantled of all branches and even now the bare trunks stand out prominently above the undergrowth as memorials of the great havoc that was done. In the Forest massive trees in various stages of decay are piled up on one another whilst canes, creepers and young trees are struggling for masterhood. The Oil trees with their long and massive roots have withstood the storm better than any others. The trees with either no tap roots, or with but very short ones, have all been blown down, and to show the force of the storm the roots have torn up along with them at least two tons of earth; and altho, four monsoons have passed away since the Cyclone, the earth is piled up 8 to 10 feet and still attached to the roots. It is necessary to cut a road to penetrate into this heterogeneous mass and although this is a work of some difficulty, a valuable lesson lies buried there. The durability of timber, growth from shoots, whether or not a different class of trees is supplanting that which has been swept away &c. This, however, is a work requiring both considerable time and labour, and the subject generally is alluded to simply to show the extent of the denuded Forests, and that the above topics would not have been overlooked had an opportunity offered of readily ascertaining any of these facts. There are ranges of hills on all the Islands in the Cyclone visited district, so that in sheltered places there are, on all of them, considerable quantities of timber trees untouched by the storm.

116. This Island is near the northern boundary of the Cyclone visited District. Owing to its proximity to Mergui it has hitherto been one of the most important in the Archipelago. Being the only large one where there are Burmese and Karen residents, it has been more explored and its resources are better known than any of the others. Besides, from the numerous plots of level land, there is more alluvial earth than on the other Islands, and in this rich soil the trees attain proportions which are not usually seen. For some years past a very large amount of Thingan has been cut and brought from this place into the Mergui market. King's Island hitherto resorted to for Timber.

117. When the notification respecting the reserved trees became generally known, applications were made for "Free Trade Permits" for no less than 1,085 logs cut on this Island prior to the 31st December 1876, whilst applications from *every other part of the Mergui District* amounted in all to only 313 logs. There is still a large quantity of timber on the Island but it is very far inland. All the spaces near the creeks have been either entirely cleared or weeded of all good trees. Timber felled on Free Permit.

Thingan Tracts.

118. In agricultural pursuits Baron de Granges was the first pioneer, and very near, if not within, a large Thingan tract he cleared an extensive block of land for cultivation, but years ago this was given up. Various species of trees of from 6 to 8 feet in girth have sprung up, but the boundary line is still left, for these are mere dwarfs by the side of the primitive forest trees many of which have clear stems of from 130 to 150 feet, and have often a girth of from 15 to 20 feet. In no place, either on the main land, or on the islands, have such magnificent trees as grow here been met with.

Akyaw tree unknown.

119. The Akyaw tree is not known to grow here, but there is a probability that it does so in some part or other, as it grows on the Tavoy Island which is further north than this, and but few of the Burmese know the tree. There are here tolerably large tracts of flat land, a great portion of which is under cultivation as many of the Burmese stepped into the shoes of Baron de Granges, and this season will see another large block added to them.

Tavoy Island. Resources in Akyaw.

120. Having this report to send by a fixed date, this Island could not be visited, but as it was important to know about the Akyaw tree, the men who were taken to the other Islands and knew the Akyaw tree well, were sent to ascertain whether it grew there or not, as a very old Malay resident at Bowpin, who formerly rented the Moscos Bird-nest Islands stated that he had seen it there.

As far as could be ascertained during a short visit it grows there but is believed not to be plentiful. Here the Selungs do not know the Akyaw tree, as they are no longer dependant on it as a means of subsistance for some months in the year. Although formerly fishermen, like the rest of the tribe, they have now forsaken this calling and turned cultivators. Rice, however, is the only cereal they have undertaken, and it is probably owing to their having mixed up more with the Burmese and Karens, that they have thrown down their fishing nets and taken up the ploughshare.

Besides the Selungs, there are 20 houses belonging to the Karens who have settled down there. They of course are cultivators, and as the oil trees are tolerably plentiful, they make torches also.

Amongst the trees observed in the Forest, Kadoot, Yemmanay and the oil trees are said to be the most abundant; at least in such places. as were visited, whilst "Anan" and a *Bassia* are now and then seen.

Bays of the Island.

121. In days gone by, the bays of some of the Islands would probably have furnished fine anchor ground, but many of them in the southern part of the Archipelago are fast filling up with the work of the coral polypus. The water being exceedingly clear, a breastwork of coral, tolerably perpendicular, often 20 feet high and of globular, mushroom, and other shapes may be frequently seen. As the coral is formed, the interstices are filled up with sand, so that *terra firma* is formed by the industry of these little workers, which in ages to come will most probably form a limestone rock.

From motives of their own the coral polypus do all their handiwork under water, seldom permitting it to ascend above 3 inches below low water mark. This rule is apparently only deviated from, when an abrupt stoppage would interfere with the symmetry of a particular design.

At high water, ordinary sized boats can be run over the coral beds close to the shore, but when the water is low, it is very difficult to get a landing place far away from the shore even for a small boat.

As yet they have confined their labours entirely to the bays. Those on St. Mathews' Island are not so generally blocked up as those on Hasting's, St. Luke's, Bentick and a few others.

Product of the Island.

122. Owing to none but natives now and then visiting the Islands, there has been no data with which to confront the most exaggerated reports, which have long been current, respecting the amount and value of the Forest produce obtainable on the Islands in the Mergui Archipelago.

The only Forest produce *collected* on any of them is, Insect-dammer, Honey, Bees-wax, and Akyaw. The former is not very abundant, and is collected for local consumption only; being used to caulk the seams in boats.

123. Honey and Bees-wax are not plentiful. The total amount collected on the southern Islands annually does not exceed 50 viss of each. Even half this quantity is now estimated as the maximum, and the whole is used locally; none whatever being exported. Honey and Bees-wax not plentiful.

On the Northern Islands, a much larger quantity than the above was formerly collected, but since the Cyclone, the amount has become greatly reduced. The Forests cannot be so well examined now as formerly, and the Selungs in a most innocent way say they don't know where the bees have gone to, as in places, where they were abundant prior to the Cyclone, not one is said to be seen there now.

The accuracy of the statement, as to the reduced quantity collected, is supported by the list of exports which accompanies this, the value of Bees-wax exported in the official year 1871-72 being Rs. 1090 whilst in 1874-75 it amounts to only Rs. 156-8-0. Honey also shows a corresponding decrease. the value in 1871-72 being Rs. 1160-8-0, whilst in 1874-75 it is only Rs. 92. Last year, however, shows a decided advance on these returns, for although there was no bees-wax exported, it being used locally, the value of the honey amounts to Rs. 1231-8. These sums represent not only the amount collected on the Islands, but also that brought from Forests on the greater and lesser Tenasserim, none of which were visited by the Cyclone.

At the latter places, the right of collecting Honey and Bees-wax is let out, and the annual Revenue from this source is about Rs. 100. Although small, the tax at these places is a most judicious one, as it prevents quarrels and much ill feeling amongst the inhabitants; but as the Selungs are the only people who collect either of these products on the Island, no tax has been levied on what they get.

124. From these remarks it will be seen that insect dammer is a product undeserving attention, and that Honey and Bees-wax do not at the present repay the labourer for the time expended in collecting them, so that actually Akyaw is the only Forest produce of value and importance. Outturn of Forest produce.

Allusion is here made as to what is collected; not what might be collected. Caoutchouc, Gutta Percha, Dragons blood &c. could be obtained, but owing to the high rate of wages expected by the Burmese, the only means of getting them at payable rates would be through the Selungs. At the present time the amount of Akyaw annually procured on the Islands may be stated at about 1000 viss; each viss varying in value from about Rs. 3 to Rs. 22. The former price however, is for very small pieces with only a trace of resinous matter in them, whilst the latter is for large selected pieces of a black color owing to the large deposit.

Rs. 10, is about an average so that at this rate 1000 viss, collected annually, would be equivalent in value to Rs. 10,000.

This amount therefore represents a gross total of all exported Forest Produce collected on the Islands.

It need scarcely be stated that the Selungs are not paid probably one-fifth of these prices. A few loongyees, some remnants of cloth, a little paddy, a small quantity of tobacco, and perhaps the smell of opium now and then, is about all they get for the whole of the Akyaw collected. The lions share of their labours go almost solely into the pockets of the Chinese, as the slice which the Malays take is not a large one. At one time the Malays collected a very large quantity, more it is said than the Selungs—but as the trees became scarcer, a few go now and then for short periods only.

Akyaw being the only Forest produce which is exported, these questions are all answered under that heading. AKYAW.

125.	English	...	...	...	Eagle-wood.
	Burmese	...	...	...	Akyaw.
	Malay	...	...	...	Kiyu-garu.
	Siamese	...	...	...	Nooah-mi.
	Chinese	...	...	...	Nyaw-chah.
	Seylonese	...	...	...	Kihay-Sinnah.

The Akyaw tree was neither in flower nor in fruit at the time the Islands were visited. Mr. Kurz, however, in his Preliminary Report of the Forest and other vegetation of Pegu, page 104, states that the *Aquilaria Agallochum* "Furnishes that kind of Eagle-wood called by the Malays, Kayu-garu."

"*The Kayu-garu of the Malays is the Akyaw of the Burmese therefore* the Akyaw is the Eagle-wood.

Under Thymelacœ, Professor Oliver, in his First Book of Indian Botany, states that a near ally of the Daphnes is the rare Eagle-wood (*Aquilaria Agallocha)* with a fragrant resinous wood. It may be taken as a sub-type of the family from which it differs in its two-celled ovary and dry dehiscent fruit."

Quoting from Oshaughnessy, Roxburg, Voigt and others, Balfour in his work on the Timber Trees of India and of Eastern and Southern Asia, states "that the Eagle-wood is a highly fragrant wood much esteemed by the Asiatics for burning as incense. There are several kinds in commerce, and supposed to be obtained from the *Aloexylon Agalochum*, Lour. *Aquilaria Agallocha*, Roxb. the *Aq: Malaccensis*, Lam, and the *Aquillaria Secundaria.* The Eagle wood seems to be a resinous deposit in the interior of the tree. A good specimen of it is in the Government Central Museum, Madras." Professor Henfry says "The heartwood of *Aquilaria Ovata* and *A. Agalochum* are known as Eagle-wood or aloes-wood and contains a resinous matter of stimulant quality."

Bentley states that "the substance called Lign Aloes, *Agallochum*, Aloes wood or Eagle-wood is said to be the Ahalin and Ahaloth of the Old Testament, and the Aloe or Aloes of the New. It is obtained from *Aquilaria (Aloexylon) Agallochum* and probably from *A. Ovata.* It was formerly held in high repute as a medicinal agent in Europe, but its use is now obsolete. It is said to be useful as a cordial, and as a remedy for gout and rheumatism."

From the above extracts, it would appear that there is not only a great diversity of opinion, even respecting the number of species of trees which yield the Akyaw, but that an accurate opinion has not been formed respecting which part of the tree yields it the heartwood, according to some writers, being supposed to be the source from which it is obtained. From details furnished in another part of this Report it will be seen that the latter opinion is erroneous.

Varieties of Akyaw.

126. With regard to the number of species indigenous on the Islands, no accurate information, as to whether or not there is more than one, can be furnished until the flowers have been met with. It may, however, be well to mention that both the Malays and the Selungs state there are two kinds of trees which furnish the Akyaw but that the substance from both is identical. One tree, they say, has a slightly reddish bark and smaller leaves than the other, but in the absence of flowers these trifling peculiarities are altogether too vague to rest an assertion that there are two species on the Islands. Still, as there is good authority for stating that there is more than one species which yields the Akyaw, it is just possible that the two trees, which the Malays consider to be diffierent, may actually be so. It is immaterial, however, to allude to more than one until the flowers have been met with, as the produce is the same and the trees are not materially different.

The Akyaw trees of large dimensions.

127. The tree from which the Akyaw is obtained, is one of the largest in the forest. One which was felled was 10 feet 6 ihches in girth at 8 feet from the ground and 72 feet to the first branch.

Except that the tree has a light brownish-colored bark, and the trunk is somewhat irregularly round, it has no peculiar feature to render it readily distinguishable from many other trees in the Forest. The branches and leaves being generally at a great height, and often intersected with those of other trees, furnish no data by which the tree may be known at first glance.

Trees easy to distinguish.

128 It is easily distinguishable, however, by simply cutting a little of the bark and wood. The former is thin, light-brown outside, fibrous, like all the trees belonging or nearly allied to the Lace bark family, almost odourless, and the inner portion is very white; and on trying to pull a piece of the bark off the tree it will come cleanly away in a long broadish strip. The wood is white, soft, very light, has a very faint odour of dried apples, and the ends of the chips when newly

cut particularly in old trees turn a very pale straw color. In the absence of flowers and fruit these character, *taken collectively*, along with those peculiar to the leaves which are alternate, glabrous, small and densely but prominently veined, are sufficient to distinguish the Akyaw tree wherever it is met with. Several of these peculiarities are common to the *Polyanthias*, which are very plentiful in the Forests and are near allies of the Akyaw tree, and the ends of the chips of many species of *Ebenaceæ* turn a straw or yellow colour, but their other characters are quite at variance with those of that tree.

129. As much diversity of opinion exists as to whether the Akyaw is obtained from the "heartwood" or from the roots of the tree, considerable pains were taken to obtain accurate information on this point. The Akyaw is not entirely absent from these parts but it is rarely met with in either of them. It is found in all parts of the trunk of the tree but most frequently in the alburnum in pieces of irregular size and shape and *invariably in the midst of decayed wood.* EXTRACTION OF AKYAW.

In a few instances where the roots, which are often seen on the surface of the ground, have received some injury from trees falling on them, small pieces of Akyaw are frequently obtained at the injured part. With this exception they are never cut; and in no instance are they ever dug up, for the purpose of searching for Akyaw, as all roots which, by being embedded in the soil, are protected from injury are not known ever to produce it. When a branch has been broken off a tree by others falling on it, or when it has naturally decayed on the stem, a piece of Akyaw is almost sure to be met with of a hollow conical shape, and this is generally the best. It is also found around the rim of the holes made by an insect and several trees were felled and cut up with a view of gaining even an approximate idea as to the cause of the formation. Seeing that the Akyaw was not formed in any one particular part of the trunk same as that of "Kalamet" for instance, the question arose, was it the produce or secretion of the insect which was frequently met with in the tree. To give a shade of importance to this point there was the black rim and more or less of Akyaw around all these insect holes.

Further search, however, disclosed pieces of Akyaw where evidently no insect had ever burrowed so that other causes had to be searched for; the result of which led forcibly to the conclusion that a wound or any other injury done to the tree was the sole cause of the formation. Whether a branch decays naturally, or is broken off; or whether an insect burrows a hole or a dah cut be made in the tree the same result follows—Akyaw is formed in a greater or a less quantity, whilst in a tree which is unscathed there is scarcely any to be met with. A few simple dah cuts here and there would most likely not give a large return of Akyaw, but by artificial injury in a systematic manner a satisfactory result might perhaps be obtained Boring holes with an auger and ringing the branches to a limited extent so as not to interfere materially with the growth of the tree, might probably increase to a material extent the yield of Akyaw. On cutting up the trees, it was found that atmospherical influences are not essential to the formation of the Akyaw. The course and elaboration of the sap of trees are questions on which there is a great diversity of opinion, and a Report is not a proper medium for such unsettled abstruse questions, but it may be well to state that from careful examination, the Akyaw seems to be formed in places only where a tree has received some injury, and that it is *probably* formed owing to the sap being impeded in its usual course.

These *impressions* are not mooted as *facts*. They are simply *impressions* formed from a careful examination, and may serve as hints which merit notice, and which, if established and elaborated, would lead to important commercial results, and throw a flood of light on the physical structure of vegetation.

Regarding the Akyaw and the extraction of it.

1st. It is found in all parts of the trunk of the tree but most generally in the alburnum.

2nd. It is found in trees newly felled in connection with decayed wood; having been probably some length of time in forming.

3rd. When these trees have rotted away, which they do in about 12 months, the Selungs again visit them, when small pieces of Akyaw are found amidst the decayed wood, which were not visible at the time the trees were felled.

GEOGRAPHICAL DISTRIBUTION.

130. This tree is not known to grow farther North in Burma than Tavoy, Island and it is met with on several Islands down to Lampee and St. Matthew's in the Southern part; being probably most abundant on the two last mentioned. It also grows on the mainland at Tsandawoot near Mergui, and at Bowpin in the Laynya District.

In Balfour's Timber Trees it is stated that " Roxburg says it is a native of the mountainous tracts E. and S. E. of Sylhet in lat 24· to 25· North. "

ASPECT.

131. This tree seems to affect no one particular aspect as it is met with on Hills in all the four cardinal points, but both on the mainland and on the islands, it is probably most abundant on the western slopes.

ELEVATION.

132. Low Hills seem to be its natural habitat. It grows within a few feet of high-water mark, and ascends to an elevation of about 1,500 feet. At both extreme it attains a large size but has not been seen on the plains on the one hand, nor at a much higher elevation on the other.

ASSOCIATES.

133. Gangaw *(Mesua Ferrea)* is invariably seen. Kadoot and several other species of *Dipteraceæ* as well as one of the Thabyay's— *A Eugenia*—are very general associates.

RATE OF GROWTH.

134. As there are no rings visible in the trunk by which an approximate idea of the rate of growth might be obtained, the word of the Malays and of one or two of the Selungs, is the only source of information left. A Malay at Bowpin had observed the growth rate of an Akyaw tree near his village, which was three cubits in girth, and which he said had attained this size in 8 years, but that in the rocky ground on the Islands, it would probably have taken from 12 to 14 years to attain the same girth. It was expected that, as the Selungs are so intimately acquainted with the Islands, and depend partly on the Akyaw tree as a means of subsistence, that many of them would have noticed the growth of some trees, from shrubs up to maturity, but, with two exceptions, they had not done so. They did not even recollect ever having seen either the flowers or the fruit, and could tell nothing more about the tree than that it yielded Akyaw. The two Selungs referred to said that the tree attains a girth of 6 feet in 20 years, but as none of them keep any record of time, no tangible nor satisfactory data could be procured. From the soft nature of the wood the tree is evidently one of rapid growth.

REPRODUCTION.

135. In no place was the Akyaw tree met with out of its native habitat in the Forests and in this locality, no attempts have probably ever been made to propogate it from seed. Young plants were often searched for but never met with, and no trees were seen in the Forest which had any appearance of having grown from shoots. About two per cent only of the stumps met with, had thrown out shoots, and even these were all on young trees, and did not appear to be of more than between one and two years growth. Doubtlessly there were others of a greater age but they were not seen.

Enquiries instituted in various places as to the number of years the Selungs had been collecting Akyaw, showed that they first became acquainted with it about 27 years ago. At this time a number of Malays came from Penang to the Islands to search for it. Finding the tree adundant they felled a large number and took away the Akyaw. With the exception of one year the Selungs have been steady collectors of it ever since that time.

This enquiry was instituted with a view of ascertaining, from the number of years the Selungs had been felling the tree, what probability there was of its becoming exterminated. Even admitting the Akyaw tree to be of rapid growth and the extent of country over which it grows to be very considerable the vast number of trees which are felled annually must thin the Forest very considerably. As a proof of this, it is even now getting scarce in easily accessible places, where it was formerly abundant, and even this year some people living at Victoria Point, who have hitherto gone to St. Mathews' Island, started for the far more distant Island of Sampee. Still there are a great number of trees, although they are some distance in the Forest, and it would perhaps be premature, at the present rate of felling, to raise a cry of extermination.

It was hoped that some data might have been formed by taking " sample areas" of the number of trees in an acre but these varied so much that no reliable estimate could be framed. No area shewed more than 4 trees to the acre and in perhaps 4 or 5 successive acres there was not a single tree. Again some Hills had not a tree on them. Owing to the gross ignorance of the Selungs respecting *time* and *numbers* in particular, no accurate information could be obtained as to the number of Akyaw trees felled annually. From numerous enquiries, however, it is probable that on all the Islands no less than 8,000 trees are cut down every year. Some idea may be formed of the destruction of other Forest trees, by the felling of those of the Akyaw from the fact that the large Akyaw tree which was felled, swept down or broke the tops off 6 others trees varying from 2 to 3 feet in girth, creepers assisting very materially in this work of destruction.

In the Cyclone visited district, the Akyaw tree was not known to be very abundant, and although the Selungs go in the search of Bees-wax and Honey on many of the Islands over which it passed, they could give no information as to whether it was maintaining its position amidst the other trees or was being partially or entirely superseded.

On such Islands as were visited the dense growth prevented an extended search being made in anything like a moderate time, still, from the *rapid growth* of the tree, it is very probable that it will hold its ground.

Regarding Reproduction the following conclusions are evident:—

1st. That the destruction of the Akyaw tree exceeds that of the reproduction.

2nd. That owing to the large number of Akyaw trees on the various Islands, the present rate of felling will not lead to extermination for some few years to come, but the margins of the Forests have already been cleared, and the extermination of the tree in all readily accessible places is only a question of time.

136. The Bark is about a quarter of an inch thick, very thinly suberous and whitish outside; very white and fibrous inside; the mesophleum also partakes of the last character but is of a light brown colour. The epipheum, but more particularly the mesophleum is a kind of netted fibre similar to that of most of the trees of the Lace-bark family, to which it is nearly allied. Cloth made from the *latter* has been imported into Liverpool under the name of *Guana*, and Sloane states that " caps, ruffles and even whole suits of ladies' clothes have been made from it." BARK.

The Akyaw tree being a near ally of the Lace-bark family, its appearance led to the belief that it might also yield a valuable fibre; or if not suitable for this purpose it might answer for making paper, same as the Daphnes, and for this purpose a small quantity was collected, but as yet few experiments have been made with it. Being a kind of network, it would appear that the horizontal fibres bind the longitudinal ones so closely together it is very difficult to separate them. But when done the fibre is very strong. After soaking in water for a longer time, something more definite will be ascertained respecting it. A piece towed behind the schooner for 22 days was very little changed.

Some few of the Malays have used long strips of it for the walling in their houses, where it is said to last for 8 or 10 years.

137. The wood being very perishable is not used for any purposes whatever. It is very white, but the ends of the chips when newly cut, particularly in old trees, turn a very pale straw color. It is exceedingly soft, generally straight in the grain, but occasionally not so where the trunk is furrowed. Wood character and uses of.

138. The Burmese occasionally use it in medicine and to a very limited extent as a cosmetic The great bulk of that which is collected is sent to Penang and Singapore, and shipped from thence to China, where the small pieces are made into small torches and used as an incense or as a medicine, whilst the larger ones are worked up into articles of ornament and utility. A small quantity is taken to Calcutta and report states that a well known vender of Patent medicines in England receives consignments of it: but from various enquiries the accuracy of this report would appear to be very doubtful. Consumers and uses of Akyaw.

A small piece of it burnt in a room is a capital thing for driving away sand-flies, as these little pests will not remain where the odour of Akyaw prevails.

Parties who visit the Islands.

139. From the middle of November to the end of March, about 100 people from Bowpin and the Mallawoon District, go to cut Akyaw trees, staying on the Islands about one month or very rarely six weeks at a time. No precise date of departure is ever selected, as this depends either on their leisure or on their inclination. One year a boat may leave in December, the next year in February, whilst the year following it may not go at all. Except the Selungs, there are no men employed on this work, even for a fixed limited period, as most of them are cultivators or have other means of obtaining a livelihood. This year a boat left Mallawoon in January, with the sons of Chinese traders. Three boats left Victoria Point, containing about 20 Malay agriculturalists and fishermen, and other places sent their quota of a like kind. The Selungs collect the greatest quantity of the Akyaw from the latter end of April, to the end of June, but as there are not many sea-slugs obtainable at neap-tides, a few of them go to collect Akyaw for 3 or 4 days at a time, taking provisions with them to last for that period. Every neap-tide they do not go, and it is an exception rather than a rule that any of them do it.

Although the "Kattoos" are principally employed in carrying paddy, tobacco, shamshoo and opium to the Islands, and shells and sea-slugs from thence, they are so mixed up with the trade that a mention of them is necessary. They usually leave the mainland about the beginning of November, and remain for a month or six weeks at a time, or until they have got a cargo. Sometimes they carry away a little Akyaw, but as they leave the Islands, owing to the approach of the Monsoon weather, before the bulk of it is collected, the quantity is very limited indeed. Many of them get none whatever, a few take from 5 to 10 viss and in the estimated gross quantity, these have all been included in the returns of the villages to which the Kattoos belong.

A Schooner from Penang owned by a son of the late head-man at Bowpin of "28 tons register and licensed to carry 2 Guns and 8 Muskets" is solely employed in taking seas-lugs and shells to Penang. The Akyaw taken by the Schooner, is procured in Bowpin or Sadaing and included in the returns of those villages. With this exception the value of any Forest produce taken direct from the Islands to Penang and Singapore, must be very trifling indeed. It is believed that one boat only containing 8 men came this season from either of these places, and although the Selungs said that these men had taken away a small quantity of Akyaw, it is known that their object was to collect shells and sea slugs so it is probable the quantity was not great.

Conclusions regarding Forest produce.

140. From these remarks it will be seen that

1st. The only Forest produce of importance collected on the Island is the Akyaw.

2nd. The only collectors of it are the Selungs, and about 100 men from Bowpin and Mallawoon District.

3rd. More or less of the Akyaw is collected from November to July, the bulk of it from April to July.

No parties from beyond the frontier engaged in collection.

141. No parties from beyond British Territory were met with *engaged in collecting* Forest produce on any of the Islands, nor did enquiry lead to the belief that any large number of people ever visit the Islands for this purpose.

Some time ago the Rajah of Renoung made an application to the Assistant Commissioner at Mallawoon, for permission to cut Akyaw on the Islands, but this was not acceded to. There is, however, frequently a loop-hole in both orders and rules through which a native can often jump, and as there are no laws prohibiting British subjects from disposing of anything they have legimately obtained, either to the Malay at Renoung, or to the Chinaman in British territory, the Rajah can probably obtain all he wants by sending his Malay man to employ the Selungs.

Statement of the Export of Forest Produce from the Port of Mergui, for the last ten years.

Articles.		1866-67				1867-68				1868-69				1869-70				1870-71				1871-72			
		Quantity.	Value.			Quantity.	Value.			Quantity.	Value.			Quantity.	Value.			Quantity.	Value.			Quantity.	Value.		
Bee's wax...	Viss.	370	975	...	...	613	1,785	4	...	450	1,270	...	...	301	915	...	...	132	383	8	...	390	1,090	...	...
Rattans...	No.	4586150	6993	6	...	5,699,500	11,225	8	...	7,934,250	22,856	...	...	4,902,000	9,819	8	...	4,442,000	9,338	...	...	1,474,350	3,115	...	...
Shawbee and Shawpyoo...	Viss.	33235	1867	11	2	15,000	769	8	...	13,760	792	...	...	25,700	1,540	12	...	13,400	690	...	...	14,700	789	...	...
Wood oil...	"	18500	1975	8	...	37,695	4,181	...	...	55,875	5,423	...	...	25,200	2,369	8	...	19,000	1,769	...	...	21,050	2,016	...	...
Dammer...	"	170	13	9	7	150	18	12	...	400	45	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gingely seeds...	Bks.	1240	3727	8	...	337	1,011	...	...	1,007	3,004	8	...	1,604	4,714	...	...	2,385	6,104	...	...	80	207	8	...
Cardamom...	Viss.	1600	1460	...	...	2,900	4,750	...	...	660	1,360	...	...	1,510	2,265	...	...	1,265	2,367	...	...	1,250	1,625	...	...
Honey * ...	"	1880	803	8	...	7,330	2,425	...	...	3,925	1,308	...	...	2,230	675	...	...	3,500	1,123	8	...	3,475	1,160	89	7
Torches † ...	No.	365000	6049	4	9	442,000	6894	8	...	220,850	3,638	...	...	175,600	3,054	8	...	396,400	7,831	...	...	260,300	5,004	...	...
Akyaw...	Viss.	30	220	...	...	23	285	...	...	22	205	...	...	20	200	...	...	28	300	...	...	3	48	...	...
Thingan planks...	Tons.	9	261	...	...	9¼	191	...	...	16⅝	444	...	...	25	789	...	...	...	...	...	...	2	80	...	...
" timber...	"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kalamet..	Viss.	5650	806	8	...	6,900	1,271	...	...	12,351	2,648	8	...	5,550	811	8	...	15,775	1,776	...	...	9,870	1,075	8	...
Taing net ‡ ...	"	...	...	...	...	25,000	1,500	...	...	128,000	7,680	...	...	...	...	...	...	...	2,465	...	...	47,850	2,392	8	...
Karraway ...	"	1600	80	...	...	8,000	395	8	...	3,000	148	...	...	2,790	140	...	...	...	...	...	...	200	10	...	...
Ondong bark *	Bks.	1620	200	...	...	3,300	1,015	...	...	900	250	...	...	...	...	...	...	...	...	...	...	100	20	...	...
Gum thingan * ...	Viss.																								
Railway sleepers * ...	No.																								
Chay Tha wood *	"																								

Articles.		1871-72				1872-73				1873-74				1874-75				1875-76			
		Quantity.	Value.			Quantity.	Value.			Quantity.	Value.			Quantity.	Value.			Quantity.	Value.		
Bee's wax...	Viss.	187	531	...	...	60	195	...	...	46	156	8	...	...	...	...	...	...	...	...	...
Rattans...	No.	4,380,300	12,098	8	...	5,504,150	18,255	4	...	5,364,200	18,228	4	...	3,987,450	12,304	10	...	...	...	...	...
Shawbee and Shawpyoo...	Viss.	22,270	1,212	8	...	6,750	434	...	...	...	...	...	...	4,880	299	...	...	...	...	...	...
Wood oil...	"	17,375	2,231	...	...	39,090	7,189	8	...	82,025	10,320	12	...	26,856	2,867	8	...	...	...	...	...
Dammer...	"	500	67	...	...	200	25	...	...	325	47	...	...	...	...	...	...	...	...	...	...
Gingely seeds...	Bks.	2,579	7,426	...	...	962	3,025	...	...	248	796	...	...	598	1,685	...	...	...	...	...	...
Cardamom...	Viss.	1,200	1,200	...	...	820	820	...	...	1,540	1,540	...	...	1,487	1,487	...	...	...	...	...	...
Honey * ...	"	5,430	2,050	...	...	1,310	564	...	...	200	92	...	...	3,045	1,231	8	...	...	...	...	...
Torches † ...	No.	229,950	4,591	8	...	341,900	7,621	8	...	252,900	5,765	4	...	301,975	7,082	4	...	...	...	...	...
Akyaw...	Viss.	...	...	...	...	10	150	...	...	...	..	...	...	40	280	...	...	...	...	...	...
Thingan planks...	Tons.	168	2,336	...	...	12 2/10	307	...	...	2 4/10	76	...	...	109 10/10	3,356	8	...	...	...	...	...
" timber...	"	...	...	...	...	18 37/10	612	...	...	53 14/10	1,351	...	...	29 7/10	803	...	...	...	...	...	...
Kalamet..	Viss.	4,625	518	...	...	4,100	516	8	...	4,170	581	...	...	850	192	8	...	...	...	...	...
Taing net ‡ ...	"	30,800	1,570	...	...	89,000	4,955	...	...	12,000	600	...	...	57,900	2,895	..	...	...	...	...	...
Karraway ...	"	2,080	103	...	...	1,820	92	...	...	1,300	64	...	...	3,335	168	12	...	...	...	...	...
Ondong bark *	Bks.	...	...	...	...	...	...	...	...	...	...	...	...	100	40	...	...	...	...	...	...
Gum thingan * ...	Viss.	5	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Railway sleepers * ...	No.					Ton 3 12/16	100	...	...	No. 2,362 Tons 72 33/120 No. 11 Tons 5 33/16	2,362	...	...	...	...	...	...	...	...	...	...
Chay Tha wood *	"										37	...	...	No. 1 Tons 1 12/16	20	...	...	...	...	...	...

N. B. Vide para 123 Page 19 of Report.

* Exported to Rangoon.

† " to Tavoy, Moulmein and Rangoon.

‡ " to Calcutta.

Illicit extraction by parties beyond the frontier almost nil.

142. From the preceeding remarks it will be seen that no detailed explanatory notes respecting these points are actually necessary, as the nearest approach to any illicit transaction is that of the Malayman from Renoung; and his employing or bartering with the Selungs is far different to people going to collect Forest produce who are not resident in British territory. One point, however, may possibly be irregular. There is no proof, but every probability, that he takes opium into British territory.

Difficulties connected with control

143. A few remarks therefore may be all that is deemed necessary. The Islands, are surrounded by numerous bays, so that to examine all of these on a large Island like St. Mathews' or Sampee, to see even whether any boats were there or not, it would take 4 or 5 days, and at least so many weeks to examine the Forest, so that whilst one part was being examined, another part could be plundered. The Selungs too move about from place to place, so that, without keeping a constant watch over them, it would be difficult to say whether they were collecting shells, or collecting Akyaw.

The Akyaw too is unlike logs of timber in not being bulky or difficult to move about. Twenty logs of Thingan would not be more valuable than a quantity of Akyaw which could be stowed away in a gunny-bag.

Fear therefore might deter, but no guard would be efficient in keeping a check on the felling of Akyaw trees. Then again, the vicinity of St. Mathews' Island is not particularly free from pirates. The Penang schooner "licensed to carry 2 guns and 8 muskets" was a strong reminder that we were in pirate waters, and that there were safer places in the world than the Burman portion of the 10th degree of North Latitude. Of late, however, little has been heard of them, but if a boat was to be stationed there it would most likely be a Land mark.

Recommendation to farm out the right to collect Akyaw.

144. Possibly the best plan of dealing with these Islands would be to rent out for *a term* of *years* the right of felling the Akyaw trees, and with a view of preventing extermination, it might be advisable to limit the holder to employ a certain number of men only.

From the large profits made on the Akyaw, the Chinese, could well afford to pay for a license, as it is they, and not the Selungs, who reap benefit from it.

Plantations.

No Plantation work.

145. No plantation work is carried on within the Tenasserim charge.

Thinganeenoung Plantation of 1856.

146. Of the small experimental Teak plantations noted in the Introduction to this Report, that known as the Thinganeenoung plantation of 1856, on the upper part of the Winyeo river in the Attaran District, was examined by the Conservator in January 1877.

Being surrounded by high evergreen forest, the plantation has never been injured by fire, but portions have suffered from the encroachment of the evergreen forests. Creepers are plentiful and many trees have been hopelessly injured by them, and by trees of other kinds, which ought to be girdled or felled. Near the centre of the plantation a Thingan tree (*Hopeasp:*) which was apparently spared or imperfectly girdled, when the ground was planted in 1856, is now surrounded by a dense crop of Thingan seedlings 4 to 10 feet in height, and covering about an acre of ground under the Teak trees, which are of magnificent proportions in this part.

Apparently to insure germination, Thingan seed requires a certain degree of shade, but not the dense shade of a very young plantation.

Measurements taken, of 150 trees selected at random, throughout the Plantation, gave the following results:—

	Max.		Min.	Mean.	
	Feet.	In.	Inches.	Feet.	Inches.
Girth at 6 feet from the ground ...	4	7½	10½	2	3

The height of the trees varied from 30 to 40 feet: the stems of trees not injured by other trees are, with few exceptions, regular in shape, straight and free from branches to a great height.

147. Fifty seedlings of *Hevea elastica* were brought out from England by the Conservator in October, but on opening the Wardian case only 25 per cent were found alive, and the remainder considerally injured by mildew. The surviving plants were removed to Moulmain, and thence to Mergui in November, but by that time only a few plants remained, and these all eventually sickened and died. Introduction of "Hevea Elastica" and Para India rubber.

Towards the close of the year, 24 plants of the Para India-rubber variety were received from Dr. King, Superintendent Botanical Gardens, Calcutta, and safely conveyed to Mergui where they are reported as doing well.

Yield and Working of the Forests.

148. The following has been the outturn of the Forests during the year:— Outturn of the Forests in Teak timber.

Teak Timber.

	Logs.	*Pieces.*	*Tons.*
Brought to Depôts by Government Contractors in the Salween Division...	8,884	8,527	12,253
Worked out by Permit holders....	1,782	304	1,725
	10,666	8,831	13,978
Worked out by holders of 30 years' leases... ...	30	5,686	1,814
Total quantity of Teak timber extracted from the Forests. ...	10,696	14,517	15,792

Timber of other kinds.

149. Brought to Depôts by Govt. Contractors: Outturn in timber of other kinds.

Thitka...	281	...	337
Padouk..	298	...	238
do Branches	...	200	2
Pine	3	...	4
Chee	6	...	2
Gangaw.	2	...	1
do Sleepers	...	100	7
Sinkozee.	3	...	·5
Other kinds of hard woods, Thingan, Karaway &c. in form of sleepers.	1	1,000	70·5
Total quantity of other woods ...	594	1,300	662

	Logs.	*Tons.*
150. If to the quantity of Teak timber extracted from the Forests by Government Contractors, viz:—	17,411	12,253

Teak timber brought out by Government Contractors.

Sea-shore drift and miscellaneous teak logs.	is added the Teak timber obtained from sea-shore drift, or miscellaneous sources.	5,915	3,549
Total brought to Depôts by Government Contractors.	The total quantity of *Teak* timber brought to depôts by Government Contractors from all sources will be found to be.	23,326	15,802
Timber extracted by lease holders.	151. Adding also Timber extracted by Permit leases.	7,802	3,539
Total quantity of Teak extracted from all sources by Government Contractors and Permit and lease holders.	The total quantity of Teak timber extracted during the year on account of Government, Permit, and lease holders is found to be...	31,128	19,341

Government Agency System.

Increase under Government Agency system Thoungyeen Forest.

152. These figures compared with the outturn of the previous year, exhibit an increase of about 1,000 logs under the head of timber extracted by Government Contractors, although, owing to the low prices prevailing for small and inferior timber, several of the lower Forests, such as the Lower Domdamee, Lower Salween, and Lhinebway Forests, could not be worked.

It may be mentioned also that the increase in timber extracted by Government Contractors would have been somewhat greater had it not been deemed correct to add to the outturn of the previous year 1200 Logs Thoungyeen timber yet in course of transit and belonging properly to the year 1876-77.

The increase during the year under review is explained chiefly by an increase of 2177 logs in the outturn of the Thoungyeen Forest, but as the outturn is subject to constant fluctuation, consequent on the time occupied in floating precluding the arrival of the timber at Kadoe within the official year, this increase need occasion no surprise.

Rates paid to Government Contractors.

153. The rates paid to the Contractors have continued the same for some years, there being no occasion to amend them as was found necessary in Pegu in 1874, the result of which has been a considerable improvement in the outturn of the Government Forests during the past two years.

Increase and decrease in outturn of other Forests.

154. There has been a slight increase in the out-turn of the Beeling, consequent on a quantity of neaped timber being extracted.

In some other Forests, there has been on the other hand a slight decrease owing to timber being neaped, and from the Yoonzaleen no timber arrived within the official year.

Considerable decrease in yield of Tenasserim Teak Forests anticipated.

155. Sooner or later however, a serious falling off must take place in the out-turn of the Tenasserim Teak Forests. They are in the first place not so extensive as those in Pegu, and then again as already noted in the Introduction to this Report, some of the Teak localities have had a heavy drain upon their resources for years—the Attaran by reason of the Licence system introduced in 1829, the Thoungyeen from girdling of Teak having been many years left uncontrolled in the hands of the Karens, and the Upper Salween from the introduction of Permits with the right to girdle all trees having a minimum girth of 5 feet.

Former resources of the Tenasserim Forests.

156. The early resources of the Tenasserim Forests will be best explained by the following figures obtained from Appendix B, which gives the out-turn year by year since extraction of Teak commenced.

		Logs	Total.
Attaran	The Attaran report of 1860 shews 77,704 trees felled from 1829 to 1841 ...	1,16,000	2,81,261
	From 1841 to 1858	1,12,234	
	Since 1859-60, chiefly pieces ...	46,830	
	By Government contractors since 1875-76—pieces	6,197	
Thoungyeen	From 1845-46 to 73-74	1,25,154	1,55,338
	Since 1874-75 by Government contractors Logs and short pieces	30,184	
Upper Salween	From 1860-61 up to date	30,076	30,685
	Since 1874-75 by Government contractors from III Division of which Permit was cancelled	609	
Lower Salween	From 1843-44 to 1858-59 Logs ...	18,309	39,262
	Do. 1859-60 to 1874-75 Logs and short pieces	19,947	
	Since 1874-75 by Government contractors pieces	1,006	
Pandaw Forest	From 1859-60 up to date by Lease Holders chiefly pieces	50,148	50,148
Hlinebway	From 1844-45 to 1874-75 Logs and pieces	22,469	24,355
	Since 1875-76 by Government contractors Logs and pieces	1,886	
Houndraw	From 1859-60 to 1870-71	450	450
Domdamee	From 1860-61 to 1870-71	5,508	12,022
	Since 1874-75 by Government contractors	6,514	
Beeling	From 1862-63 to 1868-69	1,561	2,227
	Since 1873-74 by Government contractors	666	
Yoonzaleen	From 1860-61 to 1870-71	3,370	4,250
	Since 1873-74 by Government contractors	880	
			5,99,998

157. In respect to their present resources in marketable Ist class timber, the Tenasserim Teak localities may be divided into 3 classes. The present resources of the Forests.

(1) Exhausted.
(2) Considerably over worked in parts.
(3) Open to regular working.

158. Class I embraces the Attaran, Hlinebway, Houndraw, Pandaw, Koloon Island, Upper Salween II Division, and Lower Salween, and the greater part of the more accessible portions of the Lower Doomdamee Forests. Forests deemed exhausted.

There are of course small isolated Tracts here and there hitherto unworked, it having been deemed unremunerative to work them in succession. One such Tract was discovered in the Natchoung, Attaran District this past season, containing some 1st class Trees of magnificent growth, the trunks being round, straight, and clear of branches to a great height. It is probable that localities of Class I may all continue to yield considerable quantities of small size and inferior Teak timber generally known as Stem pieces, boat crooks, and short pieces.

159. Under Class (2) must be noted the Thoungyeen and Upper Salween. I and III Divisions, the latter known as the Maitharouk. The first of these Forests, the Thoungyeen, suffered considerably prior to the introduction of a regular system of girdling while the two latter have had a very large proportion of the I Class Trees removed under the Permit system with the right to girdle trees 5 feet in girth and above which was introduced in 1865 when the difficulties connected with control along the frontier and the extraction of timber from steep precipitous slopes were deemed such as to necessitate a measure of this nature. With regard to the Upper Salween Forest it may be added that the growth of Teak surpasses that of all other Teak localities. The trees being particularly tall as well as of good even shape. Forests considerably overworked in parts.

Forests open to regular working

160. Under the (3rd) head may be classified the remaining Teak localities—Yoonzaleen, Upper Doomdamee, and Beeling, few in number, and of no great extent, besides being characterized in many localities by more or less irregularities of growth which is most marked in the Doomdamee timber by a tendency to develop buttresses

Little prospect of a steady Revenue.

161. From the above brief sketch it will be seen that the prospect of maintaining a steady revenue from the Tenasserim Teak localities is not a very hopeful one, and that besides extracting all dead and seasoned Teak, every effort must be made towards introducing other woods into the market whereby the Revenue may be enhanced.

Extraction of Teak timber under the Permit system.

The only two permits in force about to expire.

162. No remarks are called for on this subject, except to record the fact that the only Permits now in force relate to the Upper Salween I and II Divisions, and will expire in December 1877, when the Forests will come under the direct or Government Agency system of working, operations being limited, as is the case now in all the Forests, to the extraction of only old girdled, dead, and blown down timber.

Extraction of other kinds of woods by Government Agency.

Padouk.

163. The out-turn in Padouk exhibits a considerable increase over that of the previous year, the Contractors having brought out 194 logs and 200 branch pieces as well as the neaped timber of the year previous, thereby making the total quantity delivered this year from the Attaran and Houndraw Forests up to 298 Logs and 100 Branch pieces, the latter in demand for manufacture of naves of cart wheels.

The cost of extraction of this heavy timber in logs about 17 feet in length and 5 to 8 feet in girth was Rs. 17 per ton and of the branch prices three fourths of the market rate.

Stock of Padouk on hand and disposals.

164. At the close of the year, 600 Logs were on hand, but as this timber should be disposed of only when well seasoned, it will always be advisable to have a considerable surplus stock on hand.

Towards the close of the year, arrangements were entered into for supplying 180 tons to the Gun Carriage Departments at Madras and Bombay partly in the form of rough squares and partly in scantling of certain sizes and shapes.

The Gun Carriage Department Bengal, is not disposed to take any of this timber.

Few Padouk Trade Permits issued.

165. Except at the close of the year, when a few Trade Permits were issued by the Civil authorities, no timber of this description has been extracted by private parties, the Deputy Conservator considering it right to refuse all applications for Trade Permits for such timber with a view to retaining the extraction of the timber entirely in the hands of Government, a measure which was recommended by the Inspector General in his Report on Forest Administration dated January 1876.

Desirable to retain extraction of Padouk in Govt. hands.

166. The desirability of such a measure was twice brought to the notice of the Local Government towards the close of the year, and the necessary instructions are shortly expected for discontinuing the issue of Padouk Trade Permits. The advantages of the measure are that the market will be supplied with only sound and seasoned timber, and a considerable source of Revenue secured to Government, an important consideration now that the Department is compelled to look to other sources of Revenue besides Teak.

Thitka.

167. There are no inducements at present to enlarge the operations in Thitka wood. The Contractors brought out 281 logs, and at the close of the year there was a balance of 600 logs on hand. Some difficulty is experienced in the disposal of this timber—the only logs disposed of being a few to the Jail Department for furniture purposes, and some to Aga Syed Abdool Hossain a leading

merchant here, for trial as sleepers, the result of which has been reported as unsatisfactory. Hence no new Contracts were entered into at the close of the year and it will be hardly advisable to do so till there is a better prospect of finding a market for such timber.

The cost of extraction is only Rs. 8 per ton. A trial shipment of 40 to 50 tons will be made to Bremen and care taken to include pieces, cut near the junction of branches and the roots, and characterized by a very diversified grain highly prized for veneering purposes.

The importation of bastard Mahogany and other furniture woods from South America quite precludes at present much prospect of obtaining in England a profitable sale for Burma red woods.

168. Only 3 logs of this valuable timber were extracted from the Thoungyeen Forests although as much as Rs. 1-8 per running cubit in length has been offered as an inducement to the Karens to exert themselves. Pine.

The great length in which this timber is required for sale, as mast pieces, is the chief obstacle to its extraction, the dragging operation being extremely difficult even with the most powerful elephants.

169. The preparation of Gangaw sleepers was commenced early in the year, —but great difficulty was experienced in procuring the requisite labor and especially good sawyers. Gangaw and other hard woods.

In November, inquiries instituted at Calcutta, regarding hard wood sleepers, shewed that there was no prospect of disposing of any sleepers except of full size 10 ft. × 10 in. × 5 in.

170. Out of the quantity already partly converted near Mergui, only 100 sleepers of this length were obtainable, leaving 100 of smaller size still on hand in the Forests. Gangaw and other Sleepers

In addition to these 100 Gangaw sleepers of full size at Mergui, 1,000 sleepers 10 ft × 10 in. × 5 in. of different hard and more durable woods, such as Karaway Thingan, Pynkadoe Chyee and Theyanee, were obtained from Tavoy, and despatched by British India Steam Navigation Company's Steamers to Agents in Calcutta, with a view to ascertain, which of these kinds the Railway Companies would be disposed to accept, and the prices obtainable.

From a reply received a little after the close of the year, it appeared that any quantity of hard wood sleepers such as Gangaw and Pynkadoe would find a market at Calcutta for some time to come but that the price would not exceed Rs. 5 per sleeper, a batch of 10,000 Pynkadoe sleepers from Arrakan having been lately disposed of at that figure.

The sleepers were obtained at Tavoy from a Contractor, and cost, delivered on board the Steamers, Rs. 2-8 each. Owing to transhipment at Moulmain, there being no direct Steamers to Calcutta, the freight charge was excessively high, Rs. 2 per sleeper. The cost of those at Mergui was about Rs. 2 each.

171. At present, inquiries are being instituted with the view of ascertaining the maximum quantity of sleepers of these two kinds obtainable from Tavoy and Mergui within a year's time, and should the quantity be sufficiently large to admit of chartering a vessel for direct despatch to Calcutta, or such as may induce the British India Steam Navigation Company to reduce their rates, it will be possible to start regular sleeper operations in the Tavoy and Mergui Forests. Having regard however to the difficulty of procuring labor, it is hardly likely that any work of this nature will secure a larger yearly out-turn at first than 10,000, to 15,000 sleepers. Future operations in hard woods.

172. A few logs of Sinkozee, a light colored but close grain wood, and 3 logs of Zebra wood were obtained from the Mergui Forests. Sinkozee, Zebra and other woods.

The latter wood was supplied free of charge to the Jail department with a view to ascertain its fitness for manufacture into cabinets and small fancy articles

of furniture. A specimen of a red and somewhat "close grain" wood was obtained by Mr. Lee from Ceylon where it is in considerable demand for furniture. Mr. Lee is of opinion that similar wood is procurable in the Mergui Forests, and should this prove to be the case a small trial shipment of it will be made to Ceylon and the Madras coast.

Inquiries regarding transactions in timber other than Teak.

173. Inquiries in fact go to prove that if any thing is attempted towards developing the resources of the South Tenasserim Forests, it must be effected very cautiously, and on a small scale chiefly in Indian Ports—and only to ports in the United Kingdom when freights are very low, or when there may be a rise in price of South American furniture woods, otherwise only a loss in Revenue will be the result. No report has yet been received on the fitness for ship building purposes of the several kinds of wood supplied to the Admiralty in 1874-75, such as Thingan, (several varieties) Anan, and Padouk, but as already noted in the Progress Report for that year the high freight charged for heavy woods, £ 6.10 per ton is the great drawback connected with the introduction of such timber into the Home markets.

Exports by sea of timber other than Teak and Forest produce.

Export of timber other than Teak

174. The Exports have been as follows to various ports.

		Home and Foreign.	British Indian.	British Burma.	Value.
		Tons.	Tons.	Tons.	Rs. A. P.
Timber ...	Pymma ...	12	...	...	600 0 0
	Pynkadoe ...	5			
	Padouk ...	..	...	31	11,543 0 0
	Thitka ...	...	75	109	
	Thitkadoe ...	...	45	..	
	Kahseet ...	..	...	2	
	Thingan ...	...	105	...	3,177 8 0
	Gangaw ...	..	7	...	500 0 0
Sleepers ...	Thingan Karaway Pynkadoe and Thayanee sleepers.	...	70	...	5,000 0 0
		17	302	142	20,820 8 0
		cwt.		gals	Rs.
175.	Wood oil ...	...	...	2,713	2,068
	Sticklac ...	1,350	...	..	12,410
	Wax ...	...	..	1	45
				Total value of Rs...	14,523

Forest produce exported from Moulmein.

Forest Produce from Mergui.

176. The exports of Forest produce from Mergui are noted in the Appendix to Mr. Lee's Report—wood oil can be purchased at Rs. 10 per 100 viss in the Mergui market, but for small quantities 12-8 has to be paid.

Bark fibre, is taken to Tavoy and there made into ropes for Kattoos, or country coasting vessels—a little finds its way also to Moulmain and Rangoon.

Dannee leaves for roofing purposes are taken to Rangoon, with which port there has been a trade in this article for the last 20 years. The Kattoos carry the largest quantity, but Steamers occasionally fill up with them.

Free grants of Teak timber.

177. No Grants are reported as having been issued in the Salween Division. No Free Grants of Teak.

Timber conversion operations.

178. During the year, a cargo of selected Teak timber was prepared and despatched to the Home Government per ship "Dreadnought," in accordance with a requisition from the Admiralty, based on a recommendation by the Conservator on the occasion of his visit to Her Majesty's Dockyards. Cargo of selected Teak for Admiralty

The Cargo consisted of

700 tons selected Teak squares.
50 „ Crooks
10 „ Planks

besides 432 tons large and small Teak Scantling, shipped merely to fill up and for sale in the Home market, together with 12 logs of wood of other kinds also shipped.

179. The Cargo was obtained chiefly from the Thoungyeen timber which comprises the greater part of the out-turn of the Salween Division, but owing to the Contractors being limited in this and other Forests chiefly to timber rejected by former Permit Holders, the quantity that had to be cut up was very large. It embraced the following batches of timber. Cargo obtained chiefly from Thoungyeen timber.

Thoungyeen	9,091	Logs and pieces.
Beeling...	131	„
Drift timber	566	„
Lower Salween	10	„

The yield of these 9798 logs was as follows :—

	Tons.	Feet.	In.	Parts.
Squares 4141 or... ...	3407	10	9	5
Scantling	3162	32	4	11
Total ...	6569	43	2	4

If 10 per cent is deducted on account of loss in butting the squares, the actual tonnage will be found to be 6229 tons, or an average of nearly 32 cubic feet per log.

180. The unsound and rejected squares, comprising the surplus over and above the quantity selected for the Admiralty, were disposed of in part to native dealers trading with the Madras coast—the quantity remaining on hand is due to the native craft not making a second trip with timber to the Madras ports owing to timber prices there being low, and finding it more profitable to convey rice from Rangoon. Disposal of rejections.

For the entire quantity of scantling which had to be converted out of the slabs, and other rejected portions, a ready and remunerative sale not being obtainable here, the Deputy Conservator of Forests, Moulmain, was under the necessity of shipping the greater part for disposal at Calcutta. A considerable quantity was supplied to the Public Works Department, Rangoon, in the form of shingles.

Financial results Satisfactory.

181. The financial results of the Transaction noted in Appendix marked C, and including the cost to the Department and sale of 1940 Thoungyeen round logs of the same batch, and which could not well be separated in the calculation, are shewn to have an estimated profit of Rs. 1,00,964-2-11.

Results with reference to the trade and future disposal of mixed and inferior timber.

182. Regarding this transaction Mr. Slym writes. "It has given some "dissatisfaction among shippers of timber here, but over the whole a transaction "of Rs. 300,000 to Rs. 400,000 one way or another cannot have much effect upon "trading operations, and it cannot be supposed that Government would dispose of "timber to shippers at a loss in order to give them profit—Besides the transaction "has thrown nearly Rs. 60,000 into the hands of mill owners *without any risk* to "them. The British Indian Steam Navigation Company have received Rs. 26,555 "for freight and another sum of Rs. 18,000 has gone into the hands of merchants "and other people here in the shape of Insurance and floating charges—It must "not be forgotten also that Rs. 100,000 worth of scantling sold to local dealers "must have left them some profit."

Considering the above results and the losses which private parties dealing in this description of Teak timber have sustained, it must be admitted that the Department has not done badly by this transaction. Experience has also been gained as to the course to be adopted in future with timber of mixed quality, when disposal of such timber in the rough leaves little or no margin for Revenue.

Departmental Elephants.

No Carriage Elephants in Salween Division.

183. Owing to the large number of Elephants in possession of the Karens in most of the Forest Districts, the Department is not under the necessity of maintaining an Elephant Establishment in the Salween Division for carriage purposes.

One timber Elephant at Moulmein.

184. Only one animal is kept at the Battery Point Timber Depôt, where the constant shifting and launching of timber cannot be satisfactorily executed without one being always at hand.

Two Carriage Elephants at Mergui.

185. In the South Tenasserim Division, Elephants being scarce, two are kept at Mergui for carriage purposes. They are also employed occasionally in dragging timber for conversion into sleepers.

Cost of Keep and feed of Elephants.

186. The Cost of keep and feed of the Elephant at Battery Point during the year has been Rs. 985-4-0, or Rs. 82-2-6 per mensem, which is very high but readily accounted for by the high price at which paddy has to be purchased, and by two grass cutters having to be maintained to bring in the grass a considerable distance by boat.

The Returns relating to the Mergui Elephants not being complete, owing to the earlier ones having been despatched to Rangoon, it is not possible to add information regarding cost of feed &c. in the South Tenasserim Division.

Yield in produce of reserved trees other than Teak

187. In appendix D will be found particulars regarding the issue of free and trade Permits in the Salween Division for reserved timber other than Teak under notification No. 18 dated 16th February 1876.

Trade Permits were issued by the Deputy Conservator of Forests for the extraction of 2,529 logs of different kinds, and by the Deputy Commissioner for 184 logs, but up to the close of the year, only 437 logs equal to 266 Tons 4 feet 2 inches had arrived from the Forests.

The 2,529 logs include 944 Boat hulls which require a full year or two to extract.

A permit for 50 Pynkado logs was also issued to the Telegraph Department but without a fee.

Free Trade Permits were issued for timber felled before the notification viz. for 3,018 logs by the Deputy Conservator, and for 195 logs by the Deputy Com-

missioners ; only 886 logs, equivalent to 531 Tons 30 feet, were however passed at the Revenue stations, and as these Permits were in force only up to 31st December 1876, the residue of the timber, if extracted, will be liable to payment of purchase money.

There is reason to believe however, that many people applied for trade Permits for the removal of timber, not actually ready for removal, or applied on the chance of buying it from other parties in the Forests.

As already mentioned in para. 82 Free Permits were issued by the Deputy Commissioner and Assistant Commissioner, for the removal of 8433 logs of various descriptions, but chiefly Pynkado, Pymma, and Engyin. Many of these Permits relate to areas which are not subject to the Government Notification relating to the 12 kinds of trees, and the information contained in them, regarding forest localities, not being very precise, the Deputy Conservator has not been in a position to ascertain the actual quantity as yet extracted under these Free Permits from areas within the limits of the Government Forests.

Section IV.

Yield of the Forests beyond the Frontier and management of the Kadoe Revenue Station.

188. The importation of Foreign Teak timber by the Salween river has again been larger than usual, although falling short of that of the previous year.

Decrease in importation of Foreign Teak timber by the Salween, although still large. Falling off also in arrivals from British Permit and Lease Holder Forests.

The Teak timber reported for duty at Kadoe, from British Forests in the hands of Permit Holders and Lease holders, shews a very considerable decrease compared with the previous year's arrivals.

189. The number of Logs and Pieces entered at the Kadoe Revenue Station during the year was

The quantity of Teak timber entered at Kadoe during the year.

Foreign	Full size logs	...	... 1,05,802	1,24,490
	Under do	...	... 2,411	
	Stem pieces	...	.. 16,277	
British	Full size logs	...	... 1,800	7,532
	Under do	...	... 5	
	Crooks	...	... 5,493	
	Stem pieces	...	... 234	

This shows a total decrease compared with last year of 20,714 logs and pieces.

190. The decrease in Foreign timber amounts to 14,119 logs and pieces, but it has to be remembered that the previous year's importation was an unusually large one, the ordinary annual outturn being about 75,000 logs.

Decrease in Foreign timber occasioned chiefly by falling off in outturn of Karennee and Mhineloongyee Forests.

Mr. Slym considers even the past year's importation very heavy, and too much for the demand.

The falling off as shewn by the following figures is due chiefly to a decrease in the out-turn of Karennee and Mhineloongyee timber believed to have been occasioned by a short rain fall.

The outturn of Foreign Teak timber during the last four years has been.

	1873-74.		1874-75.		1875-76.		1876-77.	
	Logs.	Pieces	Logs.	Pieces.	Logs.	Pieces.	Logs.	Pieces.
Karennee ...	24,449	5	46,749	272	58,230	4,628	43,366	2,812
Kyain Toung ...	5,555	...	5,373	171	8,793	1,162	99,524	3 209
Mhineloongyee ...	20,680	29	22,441	454	27,929	282	18,277	169
Thoungyeen ...	20,941	78	19,227	315	25,846	4,990	28,114	9,438
Dahgwin ...	3,894	42	4,713	96	6,163	81	6,380	649
Sittang ...	...	...	80	...	505	...	2,552	...
	75,519	154	98,583	1,308	1,27,466	11,143	1,08,213	16,277
Total...	75,673		99,891		1,38,609		1,24,490	

Decrease and increase in the several Foreign Forests.

191. The decrease in the case of the Karennee and Mhineloongyee timber, was respectively 14,864 logs and 1876 pieces, and 9,652 logs and 113 pieces. In the case of the Kyain Toung Forest, there was an increase of 731 logs and 2,047 pieces, which is doubtless attributable to the improved administration of that part of the king of Burma's territory, and consequent facilities for reaching these Forests via Mandalay.

The Foreign Thoungyeen timber also shews a considerable increase viz of 2,268 logs and 4,448 pieces which is reported as due to many of the Foresters in that part having commenced to bring down timber on their own account, now that the quality of the timber holds out so little inducement to Traders to proceed in that quarter.

It will be observed that there has been a rapid increase in the out-turn of short pieces during the last three years. The Foreign Sittang, or Nirgyan timber, shews an increase of 2,047 logs, but this would have been much greater had not the early closing of the rains caused a large quantity of timber to be neaped in the Creeks between the Sittang and Salween rivers.

Over the whole out-turn there was an increase of 5,134 short pieces, the result in Mr. Slym's opinion of the exceptionally high prices such timber commanded during the 2 years previous to 1875-76.

Decrease in British timber from permit and Lease Holders Forests.

192. The decrease in British timber subject to Kadoe duty is entirely due to the abandonment of the Permit system ; the result of which will be that only the Pandaw and Attaran Timber extracted by Leaseholders will be reported for duty at Kadoe.

Proportion between full and under size timber.

193. The Kadoe Returns again shew full size and undersize logs separately, but the percentage in the case of the latter is so small that there is reason to doubt its correctness.

The timber traders have always shewn great aversion to having the number of undersize logs noted in the " Teing-sas", and the Kadoe Establishment it has also to be remembered is small, and not always in a position to check these particulars.

Undersize logs have usually formed about 20 per cent of the total quantity reported.

194. During the year 1,20,127 logs were removed on payment of an ad-valorem duty of 7 per cent, leaving a balance on 31st March of 93,465 logs. Timber cleared at the Kadoe Revenue Station

Out of this latter number, 35,000 logs having been sold, the actual balance available for purchasers was about 60,000 logs.

195. Regarding the timber Trade during the year, Mr. Slym writes. "This is the thirteenth report which I have had the pleasure of submitting, but I regret to add that the present one has to record the most unfavorable state of things yet experienced by the Trade." The Timber Trade during the year subject to heavy losses.

The losses sustained by most of the importers of timber, have been very serious, only those who dealt in superior timber being able to balance their transactions, while others who deal in timber of middling and inferior quality have lost very heavily, owing to the falling off in the demand for such timber in the Bombay and Calcutta markets. Thousands of logs have been sold with losses varying from 15 to 30 per cent upon the cost price in the Forests. That this has crippled the Trade greatly, can be readily imagined, many having lost several year's earnings.

With so large a balance of small and inferior timber on hand at Kadoe at the close of the year, prospects are not much improved for this latter class of Traders. The demand for superior Teak timber has continued steady in the Home market, and consequently such timber has found purchasers at fair prices.

A little before the close of the year there were signs of improvement in the Bombay market, and it is to be hoped that this may continue and so relieve the present condition of the Trade.

196. The number of logs salved as already mentioned in para 150, amounts to 5,915 logs from all sources or 518 in excess of that of the previous year. This is entirely due to the increase in number of logs found without marks in the Salween river, and which have always to be secured by the Government Salvors. Drift timber operations.

These 5,915 logs and 1,884, the balance on hand of the previous year, make a total of 7,799 logs to be accounted for during the year under review.

1,819 were made over to Claimants 1,755 were sold, 566 were used in conversion operations by the Department, and 7 were utilized in the construction of an Elephant shed, thereby making a total of 4,150 logs disposed of and used, and leaving a balance of 3,649 logs on hand at the close of the year.

197. The drift timber obtained from the seashore, shews a decrease of 587 logs compared with the previous year's quantity. Decrease in Sea drift timber.

Regarding this Mr. Slym reports.

"The decrease in sea drift timber is due in a measure to the prohibition issued "by the Deputy Commissioner towards the close of the year against salving in "the Martaban Dareing circle, where the removal and dragging of drift timber "is reported to have accelerated the overflow of the sea into some extensive "areas under cultivation. However the logs have greatly decreased and not "much more than a number of burnt pieces are left. The thousands of fine logs "supposed by some to be on the seashore is nothing more than imagination, and "those pieces now there, are chiefly the remains of logs drifted out in former "years, because in late years more attention has been paid to salving on the rivers, "and timber importers have become much more particular in looking after their "timber, now that good timber is dearer, and money scarce."

198. The Steam Launch granted by Government during the past year, is reported to have facilitated greatly the control of the lower portion of the Salween river. The Steam Launch for river control.

By her an officer can reach Meebong during the dry season in one day, whereas by ordinary boat the journey occupies not less than two and a half days.

The speed thus attained ,and the constant going up and down the river, are believed to have had a deterrent effect upon bad characters, and to have further resulted in the increase already noted in number of logs salved without marks. The increase over and above that of the previous year, was 850 logs of this description of timber, the value of which estimated at as low a figure as 8 per log is Rs. 6,800 Perhaps after another year's experience, the Divisional officer will be in a position to state definitely whether the use of the Steam Launch can be credited with such results. A direct advantage however to the Department has been that communication with most of the Forest Districts has been greatly facilitated, and movements of Officers much expedited who had occasion to travel by the Salween and Attaran rivers.

Steam Launch not adapted for use at Sea.

199. Her size and build preclude her employment at the mouth of the river, but this is no drawback except in the matter of control, as during the early part of the dry season, when only it is possible to salve and bring up timber, this work can be much more economically executed by native salvors in their light canoes.

With regard to salving sea drift timber, the difficulties and expenditure connected with its removal are not likely to be much lessened by the use of a Steam Launch if such could be used—such timber is washed up by the highest tides during the monsoon, and generally found up narrow creeks, or half imbedded at considerable distances from what constitutes high water mark during the cold season. Elephants are required to move the logs, one here and one there, over considerable distances, and here the first and main difficulty is met with, as both fresh water and suitable fodder are scarce, thereby necessitating the Elephants being taken daily long distances to and from the site of work. A salvor employed in 1874 at the mouth of the Sittang was reported to have lost two out of three elephants in a very short time.

Cost of maintaining Steam Launch.

200. The expense of maintaining the Steam Launch in the matter of repairs, fuel, and painting, has been Rs. 687-8, which with the Crew's Salary Rs. 82 per mensem, makes a total expenditure of Rs. 1,771-8-0. during the year.

The repairs include an item of Rs. 160-13-0 for repair and renewal of copper fittings, the vessel having undergone apparently considerable wear and tear before transfer to the Kadoe Timber Revenue Department.

Financial results of operations connected with salvage of drift and unclaimed timber.

201. Expenditure incurred in all Salving operations, and maintenance of Steam Launch, amounted to Rs. 20,376-2-0 against receipts on account of Salvage money refunded by claimants Rs. 6,387-6-0, on account of Sale of Drift timber Rs. 16,160-3-0 and on account of logs utilized by the Department Rs. 6,217, making a total of Rs. 28,764-9-0.

The transaction exhibits therefore a clear profit of Rs. 8,388-7-0, which is considerably less than that of former years owing to the exceedingly low prices realized at the Auction Sales, and smaller quantity of timber disposed of. The balance on hand of drift timber at close of the year was 3,649 Logs or 1,765 logs in excess of that of the previous year. These 3,649 logs including about 1,200 logs without marks, are estimated to represent a total value of Rs. 23,000.

Registration of Hammer Marks.

202. During the year, the registration of 117 marks was renewed, 134 new marks were registered, and 152 applications were received for registration which are still under consideration. The revenue realized was Rs. 2,510 or Rs. 10 per mark.

The difference in the number of marks as compared with that of the previous year is thus shewn

	1875-76	1876-77	Difference
New	145	134	11
Old	194	117	77

The small difference in number of new marks calls for no special remark but with regard to decrease of 77 in registration of old marks, Mr. Slym is disposed to attribute it to the stricter scrutiny to which all applications have been subjected during the year. Control in this particular branch of the work, is exceedingly difficult, and dependant almost wholly on the observation of the officer in charge, and information which he is in a position to collect regarding the character and antecedents of applicants, many of whom suddenly apply after doing nothing in timber for two or three seasons.

203. The cases tried during the year for Breach of Timber Revenue Rules have been noted together with Breaches of Forest Rules at para. Breaches of Timber Revenue Rules.

204. The export of Teak timber has been, Export of Teak timber by Sea from Moulmein.

	Tons		Value
Home and Foreign Ports	26,102	Rs,	1,912,679
British Indian	48,493	„	3,053,707
Foreign Indian	404	„	32,320
British Burma	3,524	„	1,93,644
Total	78,573		5,192,350

Timber transactions in tonnage during the year in Moulmein.

	Tons
205. Balance at Kadoe 1st April 1876	88,454
Do at Depôt Moulmein	623
Imported from Foreign states	1,17,170
Do do British Forest, and reported at Kadoe	3,182
Drift timber disposed of during the year	2,485
British timber do do	7,858
Total	2,19,772
Exported by sea	78,573
Balance at Kadoe on 31st March 1877	93,465
Total	1,72,038 Tons

The difference in the two totals may be taken as representing the stock of timber on hand in the various timber yards, the quantity used for local purposes, and waste caused by conversion.

206. The duty levied during the year amounted to Rs. 2,19,988 and the whole of the receipts of the Revenue Department from all sources to Rs. 2,45,046-8-6. viz., Financial Results Kadoe Revenue Station.

Duty on British Timber	Rs.	3,744	0	0
Duty on Foreign Timber	„	2,16,244	1	6
Sale of Waif Timber	„	16,160	0	0
Refunded Salvage	„	5,833	0	0
Miscellaneous	„	306	0	0
Ground rent	„	248	7	0
Registration of Hammers	„	2,510	0	0
Total	„	2,45,046	8	6

The disbursements during the year were :—

A, I, Cost of timber operations	Rs.	20,376	2	0
Works of utility	„	24	0	0
Cost of Departmental tools and plants	„	1,073	0	0
Miscellaneous	„	113	9	0
Salaries	„	6,223	8	0
Contingencies	„	109	4	0
Total	„	27,919	7	0

Decrease in receipts of duty.

207. The decrease of Rs. 85,599-7-0 in the duty receipts, as compared with those of the previous year, is owing to the smaller quantity of timber that passed the Revenue Station, and decrease in the market value of timber.

The receipts during the previous year it has to be remembered were exceptionally high.

This, as well as the fact that the receipts are constantly fluctuating, and that those of the past year are higher than those of many former years, will be seen by the following figures :—

1865-66	Rs.	2,69,135	7	0
1866-67	„	1,42,164	4	0
1867-68	„	1,99,694	4	0
1868-69	„	2,72,623	11	0
1869-70	„	1,79,977	11	0
1870-71	„	1,74,862	13	0
1871-72	„	1,85,432	14	0
1872-73	„	2,42,226	7	0
1873-74	„	2,06,167	15	0
1874-75	„	2,37,056	8	0
1875-76	„	3,05,588	7	0

Of the duty received during the past year, Rs. 3,744-14-0 was at the old rate of assessment, and the remainder at the ad-valorem rate of 7 per cent.

The average per log has been Rs. 2-2-5 or 4 annas and 9 pie less than that of last year, which is of course due to the fall in the market price of timber.

Increase of Expenditure under A I.

208. The increase of Rs. 2,903-13 in expenditure under A, I, is due to the erection of a guard house at the Nantay Revenue Station, the purchase of two new guard boats, and increase in the number of logs of waif timber.

Control and management of the Kadoe Timber Revenue Station.

209. The control and management of the Revenue Station have continued to be administered by Mr. Slym the Deputy Conservator in charge Salween Division; no changes of importance have to be recorded in its internal management or control with the exception of the dismissal of the entry clerk, for dishonesty as well as carelessness in the execution of his duties.

A new guard house was erected on the bank of the Attaran river at the Nantay Station at a cost of Rs. 220, including Rs. 121 the cost of timber supplied by the Department.

Second Part—General.

Financial Results.

The Financial results can be only briefly referred to.

210. The Accounts of the Tenasserim charge not having been separated from those of Pegu till the close of the year, the Financial results of the past year will be only briefly referred to, and explanation afforded in such points as appear to call for special remark.

211. Of the two Forest divisions at present comprised within the Tenasserim the Salween Division only has contributed in any important degree to the Revenue of the past year.

The Salween Division only has contributed in any important degree to the Revenue of the year.

212. The South Tenasserim Division was only constituted a Division and furnished with a small controlling Staff under an Assistant Conservator in 1875-76, and as no important timber operations have been yet started in it, the expenditure although small will naturally be found to have exceeded the receipts, which are limited to small sums realized on confiscated timber as fees and purchase money on account of timber of the reserved kinds extracted under Trade Permits. The financial results of the despatch of 1100 sleepers during the year from this Division to Calcutta, have not yet been ascertained.

In South Tenasserim Division Revenue limited to fees and purchase money levied on Trade Permits.

213. The actual receipts during the year exclusive of duty &c., realized at Kadoe viz., Rs. 2,48,043-8-6 having been Rs. 3,01,553-9-5 and the total expenditure Rs. 4,21,140-9-1 the year would appear to have closed with a deficit of Rs. 1,19,586-15-8. If this represented the whole of the year's transactions this would be a very unsatisfactory result, after such a busy a year as the past. The deficit is however merely caused by heavy outstandings at the close of the year, and two payments having to be met for Thoungyeen timber instead of one, the previous year having benefitted by a large quantity of Thoungyeen timber without the usual payment.

Financial Results in the Salween Division.

The following figures supplied by the Deputy Conservator Moulmain, furnish the requisite information :—

	Rs.	A.	P.
Disbursements	4,21,140	9	1
Receipts.			
As per Form No. 49	3,01,553	9	5
Due on Teak timber sold in Calcutta before 31st March ...	49,365	11	9
Estimated value of Cargo of Teak timber supplied to the Admiralty per " Dreadnought"	84,150	5	4
Total ...	4,35,069	10	6
Value of converted stock in favor of year	70,438	0	0
Grand Total ...	5,05,507	10	6

214. By these figures it will be seen that the transactions of the year exclusive of those at Kadoe shew a profit of Rs. 84,367-1-5, which must be deemed highly satisfactory in the face of the depressed state of the market in regard to teak timber of mixed and inferior quality, which constitute the chief out-turn of the Forests of this Division.

Result satisfactory.

The results would have been even more satisfactory had the expenditure under B I, and B II, and other headings not been considerably increased by charges, arising out of the creation of a new Conservatorship with head quarters at Moulmain ; it may also be mentioned that the Disbursements of the Salween Division includes an expenditure of Rs. 4,039 on account of sleeper operations in the South Tenasserim Division, such as cost of conversion at Tavoy of 1000 sleepers, and freight charges to Calcutta.

As already stated the Disbursements of the year include Rs. 73,394-1-4 for Thoungyeen timber, which should have been paid within the previous year, the result of which has been that two heavy payments instead of one were made within the year under review.

215. The contractors accounts in the Salween Division shew no outstandings at the close of the year. Part payments or more strictly speaking advances were made formerly, but to Mr. Slym's credit it must be recorded that no bad debts have ever accrued to the Department. Within the last three years the system of paying

Outstandings.

a percentage of the market value, instead of fixed rates, has been successfully introduced by Mr. Slym, into most of the Forests, the produce of which is somewhat inferior, and this precludes making any advances whatever. Rs. 87,863-3-0 have been noted in Form No. 27 as a part payment, this sum being payment *in full* for the felling and dragging to the Thoungyeen river of 11,523 logs, which constitutes the first of the three distinct operations, connected with the transit of the timber to Moulmein.

System of Part payment.

216. With regard to the now obsolete system of part payments it may be added that it worked well enough in all cases, where Divisional officers were not being constantly changed.

The main difficulty connected with it, and to which must be attributed the apparent losses involved in it, was the inability of Divisional officers to subject the timber in course of transit to the same scrutiny as was carried out at the Rangoon Timber Depôt. Further under the contract rates introduced in 1861, and in force up to 1874, the provisions inserted regarding defect, were of such a nature that exception could be taken to almost every log that was not perfectly round, smooth, straight, and sound, and it became the custom with the Depôt officer to interpret and apply these clauses more or less rigidly, as the market price either rose or fell for Teak of II class and middling quality, hence constant differences arose between the Depôt officer's measurement and valuation, and those of Divisional officers.

As to doing away with advances *in toto* the prospect is purely chimerical at present, except where the work is in or near large centres of trade and capitalists can be found. It might also be possible of adoption to a considerable extent elsewhere, if the Department were to sacrifice some of its profits and offer higher remuneration to its contractors, who would then be in a position to borrow money at the usual high rates of interest. In the Salween Division, wealthy natives among both Karen and Burmese are numerous, and yet a difficulty is at times experienced in getting work done without advances.

Revenue on timber of other kinds extracted under Trade Permits.

217. The amount reported within the official year as received on account of fees and purchase money, for timber disposed of under Trade Permits has been

District.	Fees.			Purchase money.		
	Rs.	A.	P.	Rs.	A.	P.
Amherst... ...	1,006	8	0	596	6	0
Mergui	14	8	0	...	...	...
also on account of collection of wood oil, Tavoy				433	0	0

Financial Results, Tenasserim.

218. The Cash Receipts during the year amounted to Rs. 5,46,962-8-2 contributed by the several Forest Divisions as follows:—

	Rs.	A.	P.
Salween	3,01,553	9	5
Kadoe	2,45,046	8	6
South Tenasserim	362	6	3
	5 46,962	8	2

219. The expenditure of the Department was—

	Rs.	A.	P.			
Direction	10,195	5	1			
Salween	4,02,131	1	8			
Kadoe Revenue Station... ...	27,919	7	0			
South Tenasserim	8,814	1	3			
				4,49,059	15	0

which gives an aggregate Cash surplus in favor of Tenasserim of Rs. 97,902-9-2.

220. In addition to this Cash surplus the sum of Rs. 3,27,890 assets of the year must be added in order to show the actual Financial Results for the year. The surplus of the year for Tenasserim will therefore be Rs. 4,25,792-9-2. Assets of the year.

II GENERAL REMARKS.

221. The Conservator returned from 18 months furlough to Europe on the 6th October 1876 and assumed charge as Conservator of Forests, British, Burma on the 10th October 1876. On the 20th October the Conservator proceeded to Moulmain and took charge of the Tenasserim Forests leaving in accordance with the orders of Government those of Pegu in charge of Mr. Ribbentrop as Additional Conservator. Mr. C. F. Nepean Assistant Conservator 2nd grade, was transferred to the Salween Division and reported his arrival at Moulmain at the latter end of December 1876. Changes in the controlling staff.

222. The following officers were promoted respectively during the year from Assistant Conservator 2nd grade, to the grade of Deputy Conservator, 3rd grade, and Assistant Conservator 1st garde in Government India Notification, No. 1393, dated 3rd January 1877. Promotions during the year.

Mr. M. H. Ferrars.

" C. F. Nepean.

223. Mr. C. T. Bingham, Bengal Staff Corps, who was nominated in Notification No. 1318, dated 5th December 1876 and arrived at Rangoon on 29th December 1876, was posted to the Salween Division and reported his arrival at Moulmain on the 6th January 1877. Postings to the Department.

224. Mr. M. H. Ferrar's services were placed at the disposal of the Educational Department from the 10th August 1876 to the 26th January 1877, and again for 6 months from the 14th March 1877. Mr. Ferrars transferred temporarily to Educational Department.

225. Mr. M. H. Ferrars availed himself of privilege leave from the 20th January to 13th March 1877 as granted him in Local Government Notification No. 28 of 29th March 1877. Absent on leave.

226. The Conservator visited Tavoy and Mergui on 8th and 11th November and again on 18th and 20th April. Tours of the Conservator.

The Dalee Forest Attaran District was examined by the Conservator between 4th and 12th December, and the Sinzway Reserve Yoonzaleen District, between the 22nd and 25th December.

The Conservator proceeded to the Attaran District on 9th January and marching via Kya En and Nat choung along the East side of the Zammee river examined the Forests upwards as far. as the Meetabwee and returned Northwards via the Thinganeenoung Plantation and the Winyeo Valley, arriving at Moulmain 7th February. Between 22nd February and 24th March, the Domdamee and Beeling proposed Reserves were examined by the Conservator and also the Sinzway Reserve and Teepahdo proposed Reserve in the Yoonzaleen District.

The Winyeo District in the Attaran was again visited by the Conservator between the 9th and 13th April with reference to the selection of the Kroonkawoon Reserve.

227. In letter No. 22-129 dated 6th November 1876, proposals were submitted by the Conservator for the partition of the Salween Division into three separate Divisional charges. Proposed changes for the better control of the Tenasserim Forests.

(1) The Moulmain Division with head quarters at Moulmain embracing the Lower Salween, Attaran, and Yea Forests, also the control of the Salween river from the great rapid downward.

(2) The East Salween Division with head-quarters at Kawkayeet and comprising the Thoungyeen, Hlinebway, and Houndraw Forests.

(3) The East Salween with head-quarters at Pahpoon embracing the Upper Salween, Yoonzaleen, Domdamee and Beeling Forest.

Control of the South Tenasserim Division.

228. Mr. Whittall in charge of the South Tenasserim Division was called to Rangoon during the rains but continued to exercise a general control from thence up to 23rd November 1876 when the accounts &c., were made over to the Conservator with whom the control since continued. Since Mr. Whittall's departure Mr. Overseer Lee has however been practically in charge at Mergui, whence the more valuable Forests on the mainland and the islands of the Archipelago, can be best controlled and examined. When an officer can be spared from other more important duties an Assistant Conservator will be again posted to the charge of this Division.

Health of the Department.

229. The general health of the officers and subordinates of the department has continued good although some have undergone considerable exposure and the only casualty that has to be recorded is the death of the Beeling Forest Goungway from consumption. There has been however much sickness in the Forest districts, such as fever during the early part of the dry season, and cholera in the Attaran and Thoungyeen district towards its close. Cholera was also prevalent sometime at the Kadoe Revenue Station, and several casualties occurred among the watchmen.

Services of controlling establishment.

230. The Conservator takes this opportunity of recording that the control and management of the Salween division during the past year have been very creditable to Mr. Slym and that Messrs. Bingham and Nepean afforded valuable assistance in the examination of Forests, suitable for Reservation and other work in the Forests. Mr. Bingham by his zealous application to his duties and fitness for Forest work promises to be a valuable addition to the department. Mr. Overseer Lee also deserves commendation, for the highly satisfactory manner in which he has attended to the work of Control at Mergui involving no little exposure, privation and personal risk at sea. The duties of Superintendent of the Conservator's Office have been very creditably performed by Mr. Grady, who was nominated to this post on the creation of the separate Conservatorship.

W. J. SEATON, MAJOR,

Conservator of Forests,

British Burma.

Statement I.

FOREST DEPARTMENT, BRITISH BURMA, TENASSERIM.

Extract from the Forest Day Books of the Officers of the Forest Department showing the number of Teak trees counted during 1876-77.

Name of Division.	Name of Forest Tract.	Year of Survey.	By whom surveyed.	No. of tracts Surveyed.	Trees counted in the Survey. Teak. I	II	III	IV.	Teak.	Pyinkadoe.	Area surveyed. Length of Tract.	Width.	Area in acres.	Total of first three Classes on 100 acres.	Number of trees on 100 acres. Cutch.	Pyinkadoe.	Class of Forest.	Remarks.
	ATTARAN.																	
Salween Division.	South of the Teepothagwee, a feeder of the Maitharouk and within the South boundary North Dalee Reserve. ...	1877.	Major W. J. Seaton.	1	9	15	16	26	...	....	700	100	1·6	2,500	...	...	...	A small isolated patch of teak 4 to 5 acres in extent, stumps numerous, injury by fire everywhere visible, growth of younger classes good.
	West Maitharouk forest, between the Maitharouk and Teetagwee choungs, and within the North Dalee Reserve. ...	...	do	2	25	54	106	81	...	...	2,000	100	4·5	4,111	...	...	...	Tract about ¼ square mile in extent, annually visited by fires: growth good, stems tall and well shaped, stumps numerous.
	South of the Dalee choung; a little above the crossing of the Kyaen and Teewathaw road...	...	do	3	17	28	122	50	...	...	1,300	100	2·9	5,758	...	...	...	Tract about 5 acres in extent. Stumps numerous, trees tall but growth somewhat indifferent, except of younger classes: much injured by fire.
	North bank Goongyee choung, from the junction Nyounsinmee road and mouth of the Maitaikai choung, to a point below the latter. ...	...	do	4	56	60	130	124	...	...	1,300	100	2·9	8,482	...	...	...	One of the largest Teak tracts on the Zammee river, being 2 miles in length and of varying breadth, but not less than ¼ mile. Growth exceedingly good.

Statement I.—*(Continued.)*

Name of Division.	Name of Forest tract.	Year of Survey.	By whom surveyed.	No. of tract Surveyed.	Trees counted in the Survey. Teak. I.	II.	III.	IV.	Teak.	Pyinkadoe.	Area surveyed. Length of Tract.	Width.	Area in Acres.	Total of first three Classes on 100 acres.	Number of trees on 100 acres. Cutch.	Pyinkadoe.	Class of Forest.	Remarks.
Salween Division *Continued.*	North and South Kyoukpiah, near sources of Kyoukpiah choung, an eastern tributary of of the Zammee: Nos. 50 No. 51.	1877.	Major W. J. Seaton.	5	10	12	27	75	...	...	1,300	100	2·9	1,689	...	...	...	Teak here covers a considerable area, being met with in small groups, or one here and there. Forest very open, owing to flowering of bamboo and severity of jungle fires. Trees tall, but growth of middling quality.
	Kyoonchoung. Between the Shway Moung Choung and a point South of the Kyoon Choung where a path leads to Sat-queng. No. 52. ...	...	do	6	30	35	160	79	...	...	1,300	100	2·9	7,758	...	...	...	An extensive teak producing Tract, but Forest *very* open: limestone boulders in places, on surface; grass abundant; teak in parts of indifferent growth as regards old trees: stumps both numerous and of very large dimensions; creepers festooning almost every tree. Traces of fire very marked.
	West Megwa choung; above junction of the Mekkanan. No. 50.	...	do	7	3	4	26	9	...	...	1,900	100	4·3	767	...	...	...	One of the numerous small patches of Teak which comprise the West Megwa Forest: very open, growth good but many trees injured by fire.
	Ma-yee-taw choung, above Kheemoo (Winyeo Forest.) No. 35 a. ...	...	Leiut. C. T. Bingham.	1	7	9	10	4	...	...	500	200	2·29	1,135	...	...	...	Small isolated patch on slope of hill and about 2½ acres in extent. No trees injured by fire, growth good, trees straight and tall.

2 tracts. First situated between Kheemo and Phabya choungs: second lying North East of Injee village. ...	...	do	2	25	72	42	...	...	...	2,600 800	1,000 200	63·2	221	...	...	...	Teak mixed with dry Forest and to a great extent with bamboo: no trees injured by fire or creepers. Tract about ¼ square mile.
South East of Thitpoopathan village. ...	...	do	3	21	67	36	...	...	...	800	700	12·8	969	...	...	...	Tract about 12 acres in extent. Traces of fire visible. Teak mixed largely with deciduous trees.
Proposed Goongyee Reserve, West side, No. 26. ...	1877	Mr. C. F. Nepean ...	1	56	60	130	124	...	...	6,970	100	16	1,537	...	...	...	Vide No. 4.
Proposed Goongyee Reserve North of Goongyee choung, middle portion No. 36. ...	...	do	2	16	66	69	179	...	...	9,240	132	28	539	...	...	...	do.
do Below mouth Goongyee choung No. 54. ...	...	do	3	8	31	26	28	...	...	1,320	132	4	1,625	...	...	...	
do North Goongee choung, middle portion, No. 36. ...	...	do	4	17	17	11	105	...	...	2,640	132	8	562	...	...	...	
do	...	do	5	27	51	151	625	...	...	5,280	132	16	1,431	...	...	...	
do	...	do	6	11	36	31	67	...	...	2,640	132	8	975	...	...	...	
Thalahya choung, East Zammee, No. 32 a. ...	...	do	7	12	47	111	939	...	...	5,280	132	16	1,062	...	...	...	A greater portion in mixed Eng Forest of young growth; entire Tract about 16 acres.
Lower Thalahya choung No. 39 a.	...	do	8	374	150	160	252	...	...	9,240	132	28	2,442	...	...	...	This tract (28 acres) shews traces of encroachment by evergreen Forest in parts.
West Zammee Tract No. 30 ...	...	do	9	8	31	26	20	...	...	10,127	132	30	216	...	...	...	A very fine promising patch of Teak.

Statement I. *Continued.*

Name of Division.	Name of Forest Tract.	Year of Survey.	By whom surveyed.	No. of tracts Surveyed.	Trees counted in the Survey. Teak. I	II	III	IV.	Teak.	Pyinkadoe.	Area Surveyed. Length of Tract.	Width.	Area in acres.	Total of first three Classes on 100 acres.	Number of trees on 100 acres. Cutch.	Pyinkadoe.	Class of Forest.	Remarks.
Salween Division *Concluded.*	Akyah and Pya-ben choungs East Zammee No. 29 ...	...	do	10	21	25	42	54	...	...	13,200	132	34	258	...	...	...	A very fine promising patch of Teak.
	Portion of the South Quatcherie Forest, Krompadie choung, South Goongyee ...	...	do	11	4	21	103	187	...	...	1,320	132	4	3,200	...	...	—	Deemed suitable for reservation.
	Kala choung, East Zammee, above mouth of Goongyee choung : Tract No. 35 ...	...	do	12	24	80	111	59	...	...	3,500	132	10	2,150	...	...	...	
	West Zammee opposite Mittigate choungwa No. 43 a. ...	...	do	13	8	13	180	200	...	...	2,640	132	8	2,512	...	...	...	

W. J. SEATON, *Major,*

Conservator of Forests,
British Burma.

Statement III.

FOREST DEPARTMENT, BRITISH BURMA,

TENASSERIM.

Statement of Timber brought from the Forests by Permit Holders in 1876-77

Name and Number of Section.	Name of Forest Districts.	Name and Residence of Permit Holders.	Duration of Permit.		Timber Worked out.		Amount paid as purchase money for the timber.	Amount paid as fees for the issue of Forest Permit.	Remarks.
			From.	To.	Logs.	Tons.			
Upper Salween Forest.	I. Division ...	Nga Shway Oo ...	2nd Decr. 1871.	1st Decr. 1877.	566	509	3,235 4 0		
	II. Division ...	Kharwai Htaw ...	Do.	Do.	1,216	1,095	9,374 8 0		
Lower Salween ...	Meeboung and Myangalay ...	Moung Chain ...	...	...	304	121	152 0 0		Old timber.
	Add ...	Revenue collected on this timber at Kadoe ...	...	...	...	...	4,976 8 0		
		Total...	...	...	2,086	1,725	17,738 4 0		

N. B.—For Forms 21, 22, and 23. See Forms 49, 50 and 51 attached to Pegu Report.

Form No. 24.

FOREST DEPARTMENT—BRITISH BURMA.

TENASSERIM.

Statement of Timber brought from the Forests by Contractors and Government Agency in the year 1876-77.

Name and number of Divisions.	Name of Forests.	Round logs.					Square logs.			Logs.	Woods of other kinds.		Logs.	Tons.	Remarks.
		Yatthits.	Loozars.	Doogies.	Keel, yard, mast, and stem pieces.	Crocks and short pieces.	Squares.	Planks and Shin-byns.	Sleepers.		Logs.	Sleeper pieces.			
	Average cubical contents in cubic feet.	(26)	(45)	(59)	(90)	(20)	(40)	(8)	(3·47)						
Salween ...	Beeling	57	228	118	...	...	...	...	...	...	...	...	403	374	
	Doomdamee	...	13	57	...	2,861	...	...	...	...	...	...	2,931	1,223	
	III Division	...	...	11	...	...	...	...	...	...	...	...	11	13	
	Thoungyeen	1,020	2,945	4,301	...	1,102	...	...	...	...	...	...	9,368	8,699·5	
	Lower Thoungyeen	27	67	40	...	...	...	...	...	...	...	...	134	121	
	Attaran	...	...	...	...	4,564	...	...	...	...	...	...	4,564	1,826	
	Doomdamee (Thitka)	...	...	...	...	...	...	...	...	...	281	...	281	337	
	Attaran (Padouk)	...	...	...	...	...	...	...	...	...	498	...	*498	240	* Includes 200 branches.
	Attaran other kinds	...	...	...	...	...	...	...	...	...	1	...	1	·5	
	Thoungyeen (Pine)	...	...	...	...	...	...	...	...	...	3	...	3	4	
	Drift Timber various sources ...	...	...	...	...	...	...	...	...	5,915	...	...	5,915	3,549	
South Tenasserim...	Mergui (Chee)	...	...	...	...	...	...	...	...	...	6	...	6	2	
	Mergui (Gangaw)	...	...	...	...	...	...	...	...	...	2	...	2	1	
	Mergui (Siukosee)	...	...	...	...	...	...	...	...	...	3	...	3	·5	
	Tavoy	...	...	...	...	...	...	...	1,000	...	...	...	1,000	70	
	Mergui	...	...	...	...	...	...	...	100	...	...	...	100	7	
	Total ...	1,104	3,253	4,527	...	8,527	...	...	1,100	5,915	794	...	25,220	...	
	Tons ...	574	2,927	5,344·5	...	3,411	...	...	77	3,549	585	...	...	16,467·5	

Form No. 25.

FOREST DEPARTMENT—BRITISH BURMA.

TENASSERIM.

Statement of Timber received and disposed of from the Forests in British Burma, by the Forest Department, from 1st April 1876 *to* 31*st March* 1877

Particulars.	No. of Logs.	No. of Sleepers.	Total.
Number of logs on hand on the 31st March 1876 ...	86,507		86.507
Number of Teak logs brought from the Forests by Contractors and Government Agency	17,411		
Woods of others kinds	794	1,100	
Drift, confiscated and waif timber	5,915		
Total as exhibited in Form No. 24 ...			25,220
Number of logs and pieces brought from the Forests by permit Holders as exhibited in Statement III	2,086		2,086
Number of Squares obtained by conversion	4,505		
Ditto Scantlings ditto Tons ...	4,121		
Ditto Shingles ditto " ...	449		
			9,075
Kadoe Revenue Station.			
Number of logs registered for duty in 1876-77	1,32.022		1,32,022
TOTAL OF LOGS AND SLEEPERS ...	2,53,810	1,100	2,54,910

Particulars.	No. of Logs.	No. of Sleepers.	Total.
Logs and pieces sold during the year	7,056		
Ditto Squares ditto	2,762		
Ditto Scantlings ditto Tons ...	2,913		
Ditto Shingles ditto " ...	449		
Total as per Form No. 26 ...			13,180
Logs sold to Permit Holders	2,086		2,086
Ditto converted for Government purposes ...	9,232		9,232
Shipped per "Dreadnought" for Home Government Tons.	1.243		1,243
Ditto for Admiralty	12		12
Shipped for sale at Calcutta	.....	1,100	1,100
Logs delivered to claimants	2,037		2,037
Used for Government purposes	573		573
Number of logs cleared at Kadoe on payment of duty ...	1,20,127		1,20,127
By balance on 31st March 1877	1,05,320		1,05,320
TOTAL OF LOGS AND SLEEPERS ...	2.53.810	1,100	2,54,910

Form No. 26.

FOREST DEPARTMENT—BRITISH BURMA.

TENASSERIM.

Statement showing the amount realized on account of different classes of Timber received on Government account and sold during 1876-77.

Particulars.		Number of logs.	Cubical Contents.	Amount realized.		Average amount realized per log.		Average cubical contents per log.	Average amount realized per ton.		Remarks.
				Rs.	A.	Rs.	A.		Rs.	A.	
Short pieces		3,239	64,780	21,521	6	7	9	20	16	9	
Yatthits		90	2,340	888	8	9	13	26	18	15	
Loozars		848	28,832	8,341	14	9	13	34	14	7	
Doogies		591	20,685	5,864	10	9	14	35	14	2	
Round logs (mixed)		1,833	93,135	41,204	8	22	7	50	22	7	
		6,601	2,09,772	77,820	14	11	12	31	18	8	
Squares		2,762	84,650	70,165	...	...	...	30	41	7	
Scantlings	Tons.	2,913	1,45,666	97,559	...	...	...	...	33	7	
Shingles	do.	449	22,450	14,135	5	...	...	...	31	7	
Buttends		...	...	1,561	11	...	...	...	...	...	
		3,362	1,68,116	1,13,256	...	...	...	.....	33	...	
Thitka		131	9,836	3,169	13	24	3	75	16	...	
Padouk		67	2,200	1,980	...	29	8	34	45	...	
Pyimma		52	1,560	416	...	8	...	30	13	5	
Pine		5	350	150	...	30	...	70	21	6	
		255	13,946	5,715	13	22	6	54	20	7	
Padouk Branches	Pieces.	200	102	90	10	...	...	...	44	1	
GRAND TOTAL ...		13,180	4,76,586	2,67,048	5	...	...	...	...	...	

N. B.—This statement does not exhibit the sums realized on account of the Salween Division by the Agency Office in 1876-77. They are embodied in the British Burma Form No. 57 attached to the Pegu Report.

Form No. 27.

FOREST DEPARTMENT—BRITISH BURMA.

TENASSERIM.

Statement showing the amount expended on account of the different classes of Timber received on Government account during 1876.77.

Particulars.	Number of Logs.	Cubical Contents.	Amount paid to Contractors.	Average amount paid per log.	Average cubic contents per log.	Average amount paid per ton.	REMARKS.
			Rs. A. P.	Rs. A. P.		Rs. A. P.	
Yatthits	1,104	28,700			26		
Leozsrs	3,253	1,46,350	1,22,423 3 0	7 0 6	45	9 11 7	
Doogies	4,527	2,67,050			59		
Pieces	8,527	1,70,550			20		
Total brought out by contractors (Teak)	17,411	6,12,650	1,22,423 3 0	7 0 6	35·1	9 11 7	
Drift confiscated and waif timber	5,915	1,77,450	20,376 2 0	3 7 1	30	5 11 10	
Woods other than Teak ... Logs	794	29,225	7,048 14 0	8 14 0	36·8	12 0 9	
Woods other than Teak ... Sleepers	1,100	3,875	2,750 0 0	2 8 0	3·47	35 11 3	
	1,894	33,100	9,798 14 0	5 4 5	17·5	14 12 0	
Total paid for year's outturn ...	25,220	8,23,200	1,52,598 3 0	6 0 9	...	9 4 3	
Add expenditure incurred in 1875-76 to account of operations 1876-77	...	...	40,000 0 0	1 9 5	...	2 6 9	
Add cost of Administration Direction and other expenditure chargeable to timber brought to Depôts ...	...	...	1,88,143 9 6	7 7 4	...	11 7 0	This sum includes over Rs. 1,00,000 expended in the conversion and timber for the Admiralty for shipping charges &c.
I.—Total expenditure on Government Timber of season 1876-77	...	...	3,80,741 12 6	15 1 6	...	23 2 0	
Deduct expenditure of 1875-76 included above to exhibit actual cost of timber	...	...	40,000 0 0	...	...	...	
	...	...	3,40,741 12 6	...	...	...	
II.—Sum chargeable against permit timber	...	...	6,258 0 0	...	...	...	
III.—Sum chargeable to Kadoe Revenue Station less expenditure on drift confiscated and waif	...	...	14,186 15 6	...	...	...	
IV.—Amount of part payments in 1876-77 to account of timber operations 1877-78	...	...	87,863 3 0	...	...	...	
Total Expenditure of the Department on account of this year	...	...	4,49,049 15 0	...	...	...	

N. B.—If the Rs. 1,00,000 expended on conversion be deducted, the cost per ton will be Rs. 6-1-2 less, or Rs. 16-14-10 or about the same as 1875-76.

Appendix A.

Statement of Toungya Teak Plantations in the Tenasserim Division.

Year of formation	Name of Reserve.	Locality.	Area in Acres	Number of Plants.	Average number of plants per Acre.	Original cost	Maintenance up to 1876-77	Total cost.	Average cost per Acre up to 1876-77.	REMARKS.
1869-70 to 1872-73 ...	Sinzway Reserve.	Kwaythay Shoke & Sinzway Choungs	35	8,091	231	422 11 0	149 10 0	572 5 0	16 5 0	
1873-74 ...		Sinzway and Kwapthay Choungs..	19 93	2,073	104	12 0 0	50 12 0	62 12 0	3 2 0	
1874-75 ...		Pakagyee, Kwaythay Shoke and Koon Choungs ...	39·37	5,196	132	92 5 0	...	92 5 0	2 6 0	
1875-76 ...		Do. ...	79·87	14 586	183	84 5 0	...	84 5 0	1 9 0	
1876-77 ...		Koon, Shoke, Pakagyee Choungs and Shway Phoo Yua ...	79	12,920	165	474 13 0	160 11 0	635 8 0	8 0 0	
		Total...	253 17	42,866	169	1,086 2 0	361 1 0	1,447 3 0	5 11 0	

Appendix B

Statement showing the Outturn of teak timber in logs and short pieces from the different Forest tracts in the Salween Division from 1843-44 *to* 1876-77.

Official Year.	Upper Salween.	Yoonzaleen	Beeling.	Doomdamee	Pandaw	Hlinebway	Houndraw.	Lower Salween.	Thoung Yeen.	Attaran.	Remarks.
1843-44 ...	...	...	...	...	...	...	...	393	...	...	From Kadoo records.
1844-45 ...	...	...	...	...	...	995	..	736	...	...	
1845-46 ...	...	...	...	...	...	248	...	954	7,794	...	
1846-47 ...	...	...	...	...	...	618	...	105	11,046	...	
1847-48 ..	...	...	...	...	...	1,763	...	1,891	...	...	
1848-49 ...	...	...	...	...	...	424	...	2,408	...	...	
1849-50 ..	...	...	...	...	...	1,057	...	1,484	11,526	...	
1850-51 ...	...	...	...	...	...	1,509	...	856	...	...	
1851-52 ...	...	...	...	...	...	2,567	...	1,057	3,299	...	
1852-53 ...	...	...	...	...	...	255	...	649	...	...	
1853-54 ...	...	...	...	...	...	1,002	...	1,285	...	...	
1854-55 ...	...	...	...	...	...	2,203	...	1,985	9,564	...	
1855-56 ...	...	...	...	...	...	439	...	736	...	...	
1856-57 ...	...	...	...	...	...	1,796	...	1,913	2,771	...	
1857-58 ...	...	...	...	...	...	...	...	1,857	...	...	
1858-59 ...	...	...	...	...	...	...	...	...	...	...	
1859-60 ...	...	...	...	...	674	419	30	...	1,092	2,137	
1860-61 ...	349	396	...	1,355	651	...	19	...	577	3,169	
1861-62 ...	454	...	...	648	2,400	74	3	...	7,790	3,946	
1862-63 ...	1,382	...	189	...	876	....	226	...	750	3,900	
1863-64 ...	1,973	...	...	152	1,476	...	...	41	4,187	4,327	
1864-65 ...	1,515	...	...	550	904	...	...	...	14,009	332	
1865-66 ...	1,148	217	81	791	1,279	...	91	265	6,855	2,341	
1866-67 ...	1,364	18	409	134	664	...	76	114	613	647	
1867-68 ...	2,126	1,202	...	214	3,835	...	...	682	6,509	...	
1868-69 ...	2,352	120	882	1,358	3,,586	13,302	...	2,484	11,322	2,851	
1869-70 ...	3,900	...	...	101	5,246	...	...	479	9,291	7,129	
1870-71 ...	5,002	1,410	...	205	2,591	...	5	209	2,240	7,176	
1871-72 ...	1,119	4	...	...	967	468	...	...	5,501	2,323	
1872-73 ...	955	3	...	...	3,391	1,990	...	1,335	4,390	1,440	
1873-74 ...	1,519	...	...	...	3004	2,613	...	2,930	1,567	741	
1874-75 ...	1,834	...	...	...	6,323	727	...	6,101	2,249	3,796	
1875-76 ..	1,364	...	...	...	6,764	...	...	5,307	161	331	
1876-77 ...	1,720	...	...	...	5,517	...	...	...	51	244	
1873-74 ...	...	269	80	...	...	...	...	...	...	...	By Contractors.
1874-75 ...	306	499	53	511	...	...	...	...	8,581	...	
1875-76 ...	292	112	130	3,072	...	1,886	...	1,006	10,080	1,633	
1876-77 ...	11	...	403	2,931	...	...	...	...	11,523	4,564	
Total	30,685	4,250	2,227	12,022	50,148	24,355	450	39,262	155,338	53,027	

Appendix C.

Statement showing the result of the conversion and sale of Thoungyeen and other timber, both round and squared, from which timber was selected for supply to the Admiralty in 1876-77.

Particulars.	Amount.			Particulars.	Amount.					
By amount of actual cost of timber	1,62,096	14	4	To value of timber sold locally	1,40,626	10	1			
Do. Amount paid for converting	58,196	7	1	Do. do. in Calcutta	26,268	4	3	1,66,894	14	4
Do. do do freight to Calcutta	26,555	15	0	,, Estimated value of Deptford Cargo	...			84,150	5	4
Do. do do Miscellaneous	16,879	4	6	,, Estimated value of balance of timber in Calcutta, unsold on the 31st March 1877	...			49,560	0	0
Do. do do Controlling Charges	1,229	0	0	,, Amount due on timber sold in Calcutta before 31st March 1877.	...			49,365	11	9
	2,64,957	8	11	,, Amount unadjusted by Public Works Department, Rangoon	...			2,528	0	0
Do. Amount paid during April 1877 for freight to Calcutta	7,455	10	0	Total...	...			3,52,498	15	5
Total...	2,72,413	2	11	To Low estimated value of balance of squares and scantlings in the different yards on the 31st March 1877	...			20,878	6	5
Profit...	1,00,964	2	11							
Grand Total Rupees...	3,73,377	5	10	Grand Total Rupees...	...			3,73,377	5	10

APPENDIX D.

FOREST DEPARTMENT, BRITISH BURMA.

TENASSERIM.

Statement of Permits for Reserved Woods issued during 1876-77.

Name of District.	By whom issued.	Form of Permit.	Kinds of timber.	No. of Logs.	Amount Permit fee.	No. of Logs passed.	Cubical contents.	Amount purchase money.	REMARKS.
AMHERST.	Deputy Commissioner ...	A.	Thingan	1					
			Pyinkadoe ...	271					
			Pymma	10					
			Eng	8					
			Annan	12					
	Axtra Assistant Commissioner ...	A.	Thingan	551					
			Pynkadoe ...	4,390					
			Pymma	604					
			Eng	1,448	Total ...	8,433			
			Padouk	8					
			Thitkadoe ...	31					
			Anan	630					
			Engyeen	185					
			Kanyin	28					
			Thityah	40					
			Thitsee	2					
			not specified ...	214					
	Deputy Commissioner ...	B.	Thingan	167	Total ...	184	Tons. Ft. In, Pts.		
			Padouk	17					
	Deputy Conservator	B.	Thingan	944	472 0 0	48	20 14 9 3	100 0 0	Include 50 logs Pynkadoe for which no permit fee was paid.
			Pynkadoe ...	285	117 8 0	10	1 20 4 3	6 5 0	
			Pymma	1,230	307 8 0	326	199 9 8 4	399 12 3	
			Eng	70	17 8 0	53	45 9 5 0	90 5 0	
				2,529	914 8 0	437	266 4 2 10	596 6 3	
	Ditto	C.	Thingan	115	...	60	36 0 0 0	...	
			Pynkadoe ...	1,434	...	418	250 40 0 0	...	
			Pymma	1,065	...	359	215 20 0 0	...	
			Eng	364	...	49	29 20 0 0	...	
			Thityah	40	...			...	
				3,018	...	886	531 30 0 0	.....	
	Deputy Commissioner ...	C.	Thingan	69	Total ...	195	...	...	
			Pynkadoe ...	116					
			Annan	10					

Free Permits (Form A.) granted by Deputy Cimmissioner, Mergui.

No. of Permit holder.	Species of Timber.	No. of Logs.	Amount of duty paid on permit.	REMARKS.
			Rs. A. P.	
31.	Thingan	95	.....	For house buildings and boats.
10.	Anan	243	.....	For house posts.
3.	Theya	43	.....	Planking of houses.
4.	Pymmah	100	.....	Posts and planking for houses.
3.	Kanyin	32	.....	Planks for houses.
51.		513	.....	

Free Permits (Form A.) granted by Forest Officer, Mergui.

No. of Permit holder.	Species of Timber.	No. of Logs.	Amount of duty paid on permit.	REMARKS.
			Rs. A. P.	
39.	Thingan	74	.....	For house planks but principally for boats.
2.	Anan	70	.....	For house posts.
41.		144	.....	

Trade Permits for timber of reserved kinds granted by Deputy Commissioner (Form B.) Mergui.

No. of permit holder.	Species of Timber.	No. of Logs.	Amount of duty paid on permit.	REMARKS.
			Rs. A. P.	
4.	Thingan	27	13 8 0	14 logs for sale, 13 logs for boats for sale.
	Trade Permits Form B. by Forest Officer.			
1.	Thingan	2	1 0 0	
Total 5.		29	14 8 0	

Free Trading permits (Form C.) granted by Deputy Commissioner, Mergui.

No. of permit holder.	Species of Timber.	No. of logs.	Amount of duty paid on permit.	REMARKS.
			Rs. A. P.	
13.	Thingan	1,362	.....	1,363 logs for sale and 25 for boats for sale.
1.	Kanyin	26	.....	
	By Forest Officer.			
	Pyinkadoe	15	.....	Not known for what purpose.
3.	Thingan	16	.....	
1.	Anan	5	.....	
Total 18.		1,424	.....	

PART B

REPORT OF THE

Pegu Forest Circle

FOR

1876-77

BY

Berthold Ribentrop, Esq.,

Additional Conservator of Forests, British Burma.

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REPORT

ON

THE FORESTS

OF THE

PEGU FOREST CIRCLE.

By BERTHOLD RIBBENTROP, ESQ., *Additional Conservator of Forests, British Burma, for the Financial year* 1876-77.
Dated 1*st July* 1877.

I. SUMMARY.

1. The Annual reports from the several divisions were received on the following dates :— Date of receipt of Divisional Reports.

Sittang ...	...	...	...	5th May 1877.
Western ...	..	...	...	15th " "
Prome ...	...	..	...	16th " "
Tharrawaddie	...	...	...	25th " "
Rangoon ...	..	...	...	13th June "

The Rangoon report was delayed as small-pox broke out amongst the office establishment.

The accounts for March were closed on the 28th June 1877.

2. The Annual report for the Pegu Forest Circle is condensed as much as possible, a special report being submitted, on the year's working of the Revenue Notifications Nos. 33, and 34, of 1876. A separate report will also be sent on the Demarcation of State Reserves as soon as the season's work has been closed. The working season for this branch of the service not coinciding with the official year necessitates a separate report. A short note on this work in the Annual Report will therefore suffice.

Present report comprises a separate one on the Permit System.

Necessity for a separate report on Demarcation work.

3. Mr. Brandis in his "Suggestions regarding Forest Administration in British Burma," Sec. 3 and Sec. 4. proposed the abandonment of the plan of two classes of reserves; accordingly only one class of reserves, "Assoya Thittau," or State Forests, is recognized, which is also in accordance with the latest wishes of Government.

Recognition of only one class of Reserves as State Forests.

4. The preparation of a detailed statement of forest rights, with which a reserve may be burdened, and of privileges which may be allowed in it, has been prescribed by the Government of India for all reserves. Read Mr. Brandis' Suggestions of 1876, Sec. 15.

Rights and privileges of people in State Reserves.

There are consequently Reserves free from any rights whatever, and Reserves more or less burdened with rights. Till the year under review such privileges have never been defined, but have been allowed in a general way. During the year, however, efforts have been made to define all rights in the reserves sanctioned previously; and, for all newly proposed Reserves, a detailed right-statement and report on such privileges has been drawn up.

5. I must here make a correction of a statement made in last annual report Sec. 4. that Goverment possess only thirty odd square miles in which no rights whatsoever are recognized. This statement was made as already explained in my No. 662-138, dated 9th July 1877, to the address of the Secretary to the Chief Commissioner, in consequence of my overlooking the Local Government Proceeding, D. P. W. No. 855, dated 9th April 1872, a document which was not on this office file regarding State Reserves.

Erroneous entry in last Report of the area of reserves free of all rights.

Correct area of such reserves at close of '75-76.

The following reserves were free of any rights and privileges at the end of 1875-76.

		Acres.
Sittang Division ...	Pyoon Choung	3441
Rangoon „ ...	Kyetpyoogan	1754
Tharrawaddie „ ...	Myodwin	40
	Mokkah	7200
	Beeling	6880
	Boben Choungwa	744
	Gwaydouksan	1306
	Upper Payahgyee	1041
	Lower Payahgyee	572
	Kangyee	3801
	Thitcho	1414
	Lower Tapan	675
	Upper Tapan	1015
	Toungnyo Myo	3520
	Nyanlay	5840
	Pazinjay	1280
	Kannee	768
	Bwet	2887
	Upper Padingben	560
	Lower Padingben	241
	Shaboung	2229
	Daulay	1760
	Padetmyoung	4480
	Kyoukkyetoung	2560
Prome	Upper Choungzouk	3456
	Middle Choungzouk	2880
	Lower Choungzouk	3072
	Guaycho	6720
	Shoay Kyoondau	238
	Total acres	72374

Cutch.

Prome	Taindaw	2880
	Total	2880

Fuel

Tharrawaddie.	Choungnagoon	339
	Tsatpoke	4653
	Tseetqueng	2029
	Thendawyo	6400
	Extension of Tseetqueng ...	711
	Choungzouk	3738
Rangoon.	Hmawbee Choung	1694
	Kyoon Choung	8648
	Thitpyat Choung	3066
	Thaboo Choung	8037
	Total acres	39315

6. The Reserves sanctioned as State Reserves in the Prome Division, Mahathaman, Middle Nawing, and North Nawing and Shoaylay District, East and West, though sanctioned could not be regarded as State Reserves free of rights, as their demarcation was not completed, nor can even now be entered as such as they have not been permanently demarcated towards those areas which were originally sanctioned as Ordinary Reserves, and in which 80 Karens still wield their dahs.

Reason for excluding from the above Statement certain sanctioned reserves in the Prome Division.

7. The area of Reserves at the end of the year under review is constituted as follows :—

Present area of all classes of reserves.

Teak Reserves.	*acres.*
1. State Reserves—free of all rights and privileges	2,15,369
2. do —which have not as yet been demarcated from the Reserves still burdened with rights	63,227
3. Reserves, which cannot be regarded as State Reserves as they were sanctioned as Ordinary Reserves, and in which the rights have not as yet been definitely settled ...	1,10,454
4. Reserves, sanctioned as State Reserves in which permanent cultivation was found at time of demarcating	9,920
(Salween Division...	10,720)
Total acres ...	4,09,690

The figures in the foregoing para. show that there has been an increase of State Reserves during the year of only 16,896 acres represented by the Htoonyea and Pouktau Fuel Reserves.*

However, the work of selection &c., has briskly proceeded, and since the close of the year, the following State Reserves have already been sanctioned since April 1877 :—

State reserves sanctioned since close of '76-77.

	Sq. miles.
Khadat Reserve	100
Koon Beeling Reserve	20
Yaynay do	9
Sinmeesway do	10
Magayee do	20
Total ..	159

The Thongzai Reserve, 70 square miles, only requires the Chief Commissioner's sanction, and above 400 square miles have been selected and settled in the Tharrawaddie Division, and will be proposed shortly.

Reserves proposed or pending sanction.

I have no doubt that the areas sanctioned during 1877-78 will amount to above 700 square miles.

The examination and selection of forests has been very satisfactory and all credit is due to the officers employed thereon.—Mr. Brown and Mr. Popert only returned from the forests on the 15th of June, and none of the other officers stopped work before the beginning of the rains.

Commendable progress made by Demarcation Staff.

The total cost of selection and demarcation including salaries and allowances amounts to Rs. 2,163-6-5.

Protection and Improvement.

8. The fire-protection in the Pegu Circle has been on the whole satisfactory, though not successful in every instance. The casualties amount to about 400

Results of fire protection generally satisfactory.

* *Note.*—The Myodwin reserve with 40 acres, and the Plantations of Koloon, Shwaygoon, and Thinganeenoung with 17 acres, had been omitted in last year's total.

acres of fire-protected reserves being burnt through and the partial destruction of p. p. 43 acres of outlying toungyas.

The dry season was exceptionally long and severe. Kyetpyoogan was burnt on the 2nd of March, and it was not till the 24th of May that the rains set in at Rangoon.

The table showing the result of fire-protection will be found in Form No. 47.

Cost of fire tracing newly selected areas.

9. During the year new fire-lines have been made round 12,540 acres of State Reserves specially selected for improvement, at a cost of Rs. 11,246-3-8.

This sum exceeds my original estimate of the cost, but the length of the lines convinces me that the area included is considerably in excess of that estimated. The lines moreover have been cleared in the most efficient way.

Prosecution for breaches of Forest Rules.

10. A list of cases of breaches of Forest Rules will be found in Form No. 48 The prosecutions have not been very numerous, and the large number of convictions proves satisfactorily that the people have not been unnecessarily harassed.

Strict enforcement of Rule IX desirable.

It will be, however, necessary to insist on a stricter enforcement of Rule IX of the Forest Rules of 1865. But as the enforcement requires considerable tact so as not unnecessarily to interfere with the people, the divisional officer before having recourse to prosecution should be personally acquainted with the facts of the case. I am convinced that a few examples of strict dealing with well-proved offences of this character will prevent their recurrence.

Extent of teak and toungya cultivation during the year.

11. During the year 464 acres were cultivated with teak at a cost of Rs. 12,949-12-11 by direct Government agency ; and 245 acres of Toungyas in fire-protected reserves at a cost of Rs. 1,046.

A new feature in reproductive operations.

A new feature of the reproductive work during the year, is the artificial help given to the reproduction of fire-traced reserves by girdling over-shadowing trees and dibbling in seed in open places.

Thus seed was dibbled over 980 acres on which the bamboo flowered, and 11,932 trees of inferior quality have been girdled.

A recapitulation of teak cultivation shows as follows :—

	Acres.
Magayee	322
Mokah Beeling	12
Nyanlay	48
Bwet	81
Pyoon Choung	1
Toungyas	245
Dibbling 500 acres in rains of 1876, 400 acres of which have failed...	100
Do. 400 acres which failed in spring 1877	400
Do. in flowering bamboo in spring 1877	580
Total of area cultivated under different methods	1,789

Cultivation of plants other than teak.

12. The cultivation other than of teak and other *bonâ fide* forest trees has been very limited ; a few plants of Ceratonia Siliqua have been raised, and the Cinchona plantation has been extended by 10 acres.

Four thousand Cinchona plants have been distributed to Missionary gentlemen.

Limited extent of thinning operations.

13. Thinning operations are, as yet, of small extent : about 400 acres of plantation have been weeded.

No teak girdled in reserves.

14. No teak girdling operations took place in reserved forests.

Constitution of unreserved forests unaltered.

15. No alteration has taken place in the constitution of Unreserved Forests in British Burma ; but I have applied in my No. 1-1, dated 2nd April 1877,

Note.—These, though actual plantations, are not exhibited in Form 46 being included in the general scheme of *reboisement* in the above reserves.

to the Secretary to the Chief Commissioner, to declare the forests between the Illine and Irrawaddie subject to the same rules as those enumerated in Notification No. 49, dated 30th March 1876—At present these forests are a source of great difficulty to us. Timber without permits which may be stopped on the Irrawaddie is always said to come from these, at present open forests.

Necessity for subjecting certain unreserved forests to rules of March 1876.

16. In my Memo on the Permit system appended to this report, I have again upheld Mr. Baden Powell's proposal to declare all unalienated forests or forest tracts in British Burma, as subject to Forest rules of 1876. Many reasons have been given in favor of this step, and none against it, as far as I know.

Mr. B. Powell's proposal in regard to unalienated forests supported.

17. No alterations have taken place since last year with regard to the relation of the people to Unreserved forests.

Relation of people to such forests unaltered

18. The area of Unreserved forest annually decreases in the same ratio as reserves are sanctioned and permanent cultivation increases.

Decrease of area of such forests on what dependent.

19. Fire conservancy, as is well known, is an impossibility in Unreserved forests, however much can be done, as I found during last year's inspection, to check the evil.

Fire Conservancy impracticable in unreserved forests.

Fires are caused by the burning of the paddy-plains where no semi-evergreen forest intervenes between them and the hill forests, or by the burning of toungyas, by travellers lighting camp fires or carrying torches and by hunters [muksohs.] I grant that to prevent fires ignited by the first three causes is, as yet, beyond our control, but I am of opinion that the latter might be stopped by simply putting a high fine on the shooting of wild elephants.

Causes of fires and their prevention.

During April, the whole of the upper forests in the Opoh valley, which I am certain would not have otherwise burned, were lighted by Elephant hunters, for the purpose of driving the wild elephants into the evergreen patches near the rivulets.

Effects of fires kindled by Elephant-hunters in Opoh forest.

These forests near the Yoma are of little value for export but should be protected for climatic reasons.

20. The results of working of the Revenue Notifications of last year will be found in a separate Memo appended to this report.

Results of General protection noted in Memo on the permit system.

As already reported last year, it is impracticable to assist natural cultivation or execute any important works of Forest Conservancy in forests which are annually burned, and as stated in my appended Memo, the reservation of the 12 species as a conservative measure has as yet been a failure.

This, however, is to some extent due to the fact that the Notification has, according to my idea, been misinterpreted, in so far as permits have been granted without reference to the state of the forest.

It seems clear that if certain classes of trees are reserved, a simple payment of royalty on them should not entitle any one to a permit, but that exigencies of the forests must be taken into consideration. I have provided for this in a new draft which is submitted with my Memo.

21. Obstructions have been removed in several floating choungs and a few rest-houses are being built.

Communications and buildings.

22. 450 select teak trees were girdled under special orders of the Chief Commissioner. The timber is required for the construction of permanent bridges over the several choungs on the Prome and Tonghoo road. The Department of Public Works complained that for this purpose no seasoned first class timber was available nearer than Tonghoo and Rangoon.

Teak girdled under orders of Local Govt. for the P. W. D.

23. The last of the leases of unreserved forests has expired during the year.

Expiration of the last lease of unreserved forests.

Why the Financial result of reserved forests cannot be exhibited separately.

24. I have already pointed out in former reports that at present it is still quite impossible to separate here, in Burma, the Yield and Working and the Financial results of Reserved and Unreserved forests. The reasons are obvious. The material brought from the different divisions is brought to Central Depôts where it cannot, in the first instance, be kept separate without large additional expenditure, and where again it has to be classified and mixed up in the interest of the market. Here, quality is our only guide, and we cannot afford to take into consideration whence it is obtained.

In the forest also we have, especially during the time of extraction, not sufficient supervision to fix with accuracy whether the wood is the produce of a reserved or unreserved forest.

It will therefore be necessary for some years to come to form separate chapters for Yield and Working and Financial results, though the Forest Department Code prescribes them to be treated as sub-heads.

Outturn of teak timber and its cost.

25. Altogether 18,965 logs of teak were extracted from the forests at a cost of Rs. 224,339-8-8.— 5,949 neaped logs have been counted and marked, and next year's out-turn will therefore at least equal that of the year under review.

About 2000 tons of refuse timber have been extracted by Railway contractors under permission of the Forest Department.

Timber extracted departmentally and under trade permits.

26. 1363 logs of timber other than teak were extracted departmentally. The information of timber of other kinds under free trade permits, is, and must for years remain, very unreliable. The figures, as far as they were ascertainable, will be found in the Memo on the working of the Revenue Notification submitted as an appendix to this report

No. of teak logs salved during the year.

27. 4,186 logs of teak drift timber were salved, of which 2,619 were claimed, leaving Government in the possession of 1,567 logs.

No. salved of woods of other kinds.

295 logs of other kinds were salved, of which only 27 were returned. The total amounts to a few hundred logs in excess of previous year.

Timber brought in from forest divisions.

16,035 teak logs were despatched from the different divisions to Rangoon as well as 276 logs of teak and 24 of Thitka drift timber.

Quality of timber of all classes received and disposed of at the Depôt.

28. In the Central Depôt 17,218 tons of teak and 1,376 tons of other timber were received during the year against 20,756 tons teak and 2,416 tons of other timber disposed of, leaving a balance of 7,188 tons teak and 47 tons other timber in hand at the close of the year.

Average prices realized on teak at Central Depôt.

29. The average prices realized in the Central Depôt were, per ton :—

Teak.

Mastpieces	...	...	...	Rs.	23	13	8	per ton
Yardpieces	...	...	...	„	28	0	0	do
Doogies	...	...	...	„	36	13	6	do
Loozars	...	...	...	„	39	7	1	do
Yatthits	...	...	...	„	26	13	5	do
Or for I Class timber	...	...	...	„	50	9	6	do
II „ „	...	...	..	„	25	5	0	do
For converted timber	...	...	..	„	37	11	3	do

Price obtained for woods of other kinds.

For timber of other kinds, Rs. 46-8-3 per ton were realized for Padouk ; Rs. 32-11 0 for Thitsee ; Rs. 21-1-0 for Pyimma ; and Rs. 20-14-11 for Thitka and Thitkadoe ; Thittoo realized Rs. 10-4-3 per ton.

30. The disposals in other parts of the Province stand as follows :—

Statement of teak timber disposed of in other parts of the Province.

Teak.

Division.	Logs. I Class.					Logs. II Class.					Refuse timber, pieces.					Scantlings.					Remarks.
	No.	Tons.	Rs.	A.	P.	No.	Tons.	Rs.	A.	P.	No.	Tons.	Rs.	A.	P.	No.	Tons.	Rs.	A.	P.	
Prome ...	187	226	10,342	4	0	361	47	1,643	4	3	30	15	171	0	0	250	2	25	0	0	
Tharrawaddie ...	537	618	35,143	2	6	151	150	4,517	7	0	110	89	1,127	9	3	93,950	1,905	19,049	1	6	
Sittang ...	...	...	...	...	...	...	...	...	...	...	1,234	617	10,276	8	0	...	...	...	...	...	
Western Division ...	5	5	217	0	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Total...	729	849	45,702	6	6	512	197	6,160	11	3	1,374	721	11,575	1	3	94,200	1,907	19,074	1	6	

Price realized on logs of sizes and converted timber.

This table shows that 3,674 tons of teak timber have been disposed of in the interior of the Province at the following average prices :—

I Class logs @	...	...	...	...	Rs.	53	13	3 per ton
II „ „ „	...	...	...	...	„	31	4	4 do
Refuse pieces „	...	...	...	...	„	16	0	10 do
Scantling „	...	...	...	...	„	10	0	0 do

Price obtained on timber of other kinds sold out of Rangoon.

The timber of other kinds sold by the Department away from Rangoon realized Rs. 14 4 6 per ton.

Total quantity of timber sold by Government agency.

The total amount of timber sold by direct Government agency amounts to :—

Teak	...	...	...	24849 tons
Other woods	...	...	...	2961 tons

Statement of Departmental Elephants on hand.

31. The number of Departmental Elephants at the beginning of the year was :— 61

Males...	36	
Females	25	
Number purchased during the year		19
Males...	6	
Females	13	
Resumed from Contractors (female) ..		1
Total ..		81
Paid for by Contractors		9
Males	2	
Females	7	
Casualties		
Males	3	
Females	4	7
Sold by Public auction ... (male) ...		1
Balance at 31st March 1877		
Males	31	
Females	34	64
Total...		81

Health of Elephants.

The health of Elephants throughout the Province has been satisfactory.

Comparative value of Elephants loaned to Contractors.

The value of Elephants loaned to Contractors at the end of the year is estimated at Rs. 30,741-15-6 against Rs. 46,597 at the end of 1875.

Items excluded from notice in the Summary.

32. The few minor additions to dead stock mentioned in the reports for each division require no notice in the Summary, nor does the necessary and annually recurring expenditure on Communications and Buildings.

No. of Contractors employed.

33. We employ at present 81 Contractors in the Pegu Forest Circle.

Extent of outstandings by them.

The outstandings by them to the Department, with the exception of Rs. 3,082 15 0 due by Pynkadoe Contractors, are all covered and can be adjusted at any time.

Receipts and Expenditure of the Pegu Circle.

34. A glance at the totals of Statement 49 shows that the actual Receipts of the Pegu Circle amount to Rs. 10,04,505-10-2.

Against an Expenditure of Rs. 5,55,984-0-9

Exhibiting a surplus net Revenue of Rs. 4,48,521-9-5 *

The account for the Pegu Circle as exhibited in Form 21 of 1875-76 stood as follows :—

Revenue	Rs.	12,67,812
Expenditure	„	5,69,949
Surplus	Rs.	6,97,863
Expenditure on Cinchona plantation	„	8,496
Total Surplus	„	7,06,359

* The difference of assets in favour of the year in Form 51 and 60 amounts to Rs. 2,264.

Rev. I, 1,*a* exhibits a decrease of Rs 3,73,156-15-2, owing to a large falling off in sales to Public Departments, while Rev. I, 2, *a*, exhibits an increase of Rs. 40,762-5 notwithstanding the abolition of the Permit system, and is accounted for by collections under Notifications Nos. 33 & 34 of 8th March 1876, which authorise the levying of duty on reserved woods. Rev. I, 3, exhibits a decrease of Rs. 18,616-9-9 as compared with 1875-76. Rev. II, 1, exhibits an increase of Rs. 172-8-0, and Rev. II, 2, Rs. 18,021-14-0. No revenue was credited under this head the previous year. The larger portion of this amount was collected in the Prome Division on permits issued for the maufacture of Cutch. Comparison of Receipts with previous year.

Under IV, Miscellaneous, there is an increase of Rs. 20,030-11-3, the greater portion representing sums worked off by contractors on value of elephants loaned to them.

Head A I, 1, *a*, shows a decrease of Rs. 19,660-10-1, due to more contracted timber operations. A I, 2, exhibits an increase of Rs. 925-9-10, and will continue to increase for some time to come. A I,3, exhibits a decrease of Rs. 1,642-5-0. A, II, 2 exhibits a decrease of Rs. 1,163-6-1, the overseer in charge of this work having been transferred to Mergui forest operations, nothing has been done in collecting minor produce. The expenditure under A III, 1, and 2 exibibts an increase of Rs. 365-12-8 and a decrease of Rs. 199-3-9 respectively. A, IV, 1, *a*, shows a large increase of Rs. 8,817-12-10 ; there has been a considerable increase on the treatment of Natural forest in their protection from fire, improvement and conservation. A IV, 2, exhibits a decrease of over Rs. 10,000 exclusive of Cinchona charges, which are debited to Imperial Revenue. A VII, 1, exhibits an increase of Rs. 1,603-9-8, while 2, Buildings and offices, exhibits a decrease of Rs. 958-3-0 ; and 3, compensation for land, shows Rs. 947 paid on that account. 4 exhibits a decrease of Rs. 738-14-2. Under AVIII, cost of Departmental cattle, there has been an increase in 1, 2 and 3 of Rs. 1,381-9-3. A IX, Plant and tools, exhibit a decrease under both minor heads of Rs. 5,182-2-6. AX, miscellaneous charges, exhibits on the whole a decrease of Rs 1,281-6-4. Comparison of Expenditure with previous year.

Under B, Establishments, there has been a decrease in the salaries of superior officers to the extent of Rs 2,987-2-3, and an increase of Rs. 7,327-3-7, under Protective and Office Establishments caused by annual increments, and the sanctioned scale being more fully worked up to. B II, Travelling allowances, show an increase of Rs. 5,489-2-9. B III, Contingencies, exhibit a decrease of Rs. 2,147-4-1.

35. The transactions with the Public Works Department have been extremely satisfactory. We incurred, a direct loss of Rs. 34 on the delivery of Pynkadoe pieces to the Irrawaddie State Railway, besides Rs. 3,082 bad debts, outsandings by contractors ; but all other transactions have been decidedly favorable to the Department as will be seen from Form 59. It must, however, be kept in mind that the Public Works Department have the first pick of the timber and thereby lower the average of prices in the Central Depôt : this indirect loss cannot be entered in any form. Result of transactions with the P. W. D.

On timber brought from the Forests by Railway Contractors, the profits were the same as would have been realized from private individuals.

The most profitable transaction was the extraction of refuse teak from the Forests in the plains in the vicinity of the Railway line. The price obtained was only Rs. 10 per ton on the out-turn in scantling, but amounted to an aggregate of nearly Rs. 20,000 realized on timber which would, otherwise have perished in the forests, as it could not pay the Department to extract it by Contractors for the public market. It was actually timber left behind as useless. Disposal of teak refuse, the most profitable transaction.

36: The health of the officers has been satisfactory, and for the first time, since years, I am happy to say no casualities or severe illnesses have to be reported amongst the staff ; but the health of the Subordinate establishment and camp follow- Health of Officers and their establishments

ers was unsatisfactory : nearly every Officer had once or twice to change his servants and peons, and several deaths occured amongst them.

Recognition of services of Divisional and other Officers.

37. The Officers in charge of Divisions have done their duty to my satisfaction and it would be difficult for me to single them out for an individual recognition of their services. Mr. Carter has been commended by Mr. Whittall for energy and zeal in the minutest details of his work. I have also again to acknowledge the services of Mr. Buchanan, Superintendent of my Office, and of Mr. Allmark in charge of the Central Timber Depôt.

Co-operation of Civil Officers.

38. Though it is impossible for two Departments, often representing opposite interests, to agree and harmonize in every instance, I have again to record my thanks to the Officers of the Civil Department for their help and co-operation. My special thanks are due to Mr. A. O. Brown, whose careful reports and investigations regarding the Tharrawaddie Forest reserves will doubtlessly receive the acknowledgement of Government, as well as to Captain Poole, Deputy Commissioner, Rangoon ; Mr. Hough, Deputy Commissioner, Shoay-gyeen ; and Mr. St. John, Deputy Commissioner, Bassein, for the marked interest they have shown in the forest management in their Divisions.

Unsatisfactory state of the Executive Subordinate Establishment.

39. The state of the Subordinate establishment is still far from satisfactory. Every officer complained about the unreliability and dishonesty of the subordinates. Several cases of bribery had again to be tried and convictions were obtained : some other cases of bribery on a small scale were detected and departmentally punished with heavy fines. As I consider a constant change of subordinates, who have attained some local knowledge unadvisable, I have put a restriction on dismissal for minor offences.

Dismissal of a Forester and Forest Ranger.

The subordinates dismissed were those criminally convicted : and a few others, such as Moung Chiek, for giving his marking hammer to a contractor whose logs he was sent to mark, he himself remaining in a village outside the forest ; and a Forester in the Shoay-gyeen Sub-Division whose weekly reports seemed suspicious, and who, it was found on a sudden inspection, had never left his village for months, and had already written his weekly reports in original and copy for six weeks in advance of the day of inspection.

Satisfaction rendered by Clerks and subordinates noted in last report.

The same subordinates mentioned in last year's Report, para. 188, have again worked satisfactorily, as well as the staff of Clerks.

Inspection tours.

40. I have visited during the year, the forests of the Rangoon, Prome, Tharrawaddie and Western Divisions and examined all Offices, with the exception of that at Tonghoo.

Introduction of the F. D. Code.

41. The new Forest Department Code has been introduced.

II. RESERVED FORESTS.

A. Area and boundaries.

1. *Increase of State Reserves.*

Prome Division.

Area of fuel reserves sanctioned during the year.

42. During the year the Htoonyea and Pouktau fuel reserves were sanctioned, amounting to 16,896 acres.

2. *Demarcation of State Reserves.*

Prome Division.

Demarcation of State reserves in Prome Division.

43. The demarcation of the Teak reserves in the Prome Division, Thayetmyo District, has been completed at a cost of Rs. 263, or Rs. 3-8-0 per boundary pillar.

The demarcation of those in the Prome District has been nearly completed during the year, but the settlement with the Karens has not as yet received the Civil officer's sanction and their areas have not been surrounded with permanent boundary marks.

The demarcation of the Teindau and Tsatsoowah Cutch Reserves has been finished, and those are the only Cutch Reserves absolutely free of rights. Two villages, Yeaboke and Tatyah, having been bought out during the year for Rs. 462. Demarcation of Cutch Reserves.

The Mahathaman, Middle Nawing, North Nawing, and Shoaylay forests in the Prome Division have not been demarcated towards the Yoma reserves during the year, because it is the intention to transform those areas, sanctioned as Ordinary Reserves, into State Reserves, excluding only a certain area in which 80 Karens at present cultivating within them will be allowed to cut Toungyas. Karens were also still cutting toungyas in the Thayetmyo Yoma block sanctioned as an ordinary reserve but have been bought out during the year. Proposed transformation of certain Ordinary reserves into State reserves.

THARRAWADDIE DIVISION.

44. In the Tharrawaddie Division the boundaries of the Choungzouk Fuel reserve were completed. Cost of demarcating fuel reserves in Tharrawaddie Division

During the year, all 5 Fuel reserves have been demarcated at a cost of Rupees 1,275.

	Area				
Thendawyo.	10·00 sq. miles	Rs.	903	11	6
Sitquin	4.28 "	"	188	12	0
Tsatpoke	7·27 "	"	32	2	0
On Kazin	0.53 "	"	46	0	0
Choungzouk	5.84 "	"	105	0	0
Total area	27.92 sq. miles.	Rs.	1275	0	0

To this cost should, however, be added for Sitquin Rs. 90, and for Thandawyo Rs. 44, being the value of labor procured from the neighbouring villages for the privilege of cutting a certain amount of Theckkay grass out of the Reserves, which the villagers preferred to receiving wages. The work was commenced in December and completed in March.

In the first instance, the work was carried on in strict conformity with the orders issued in December 1875, and March 1876. Ten feet high posts, with boards affixed denoting the direction of the boundary, were erected at all salient angles, a line six feet broad was cleared of tall grass &c. all round the reserve; on low ground a pathway 3 feet broad was thrown up by means of a ditch, while on swampy places, raised wooden stiles were erected. Boundary boards were nailed up to suitable trees all along the boundary at 200 yards apart, and these again connected by a continuous blazed line. This form of demarcation was however found to be too expensive, and after a consultation on the subject, I limited the procedure to the erection of posts at the salient angles, boundary boards at 200 yards apart, and a blazed line. Mode of demarcation adopted.

The Thendawyo, the largest of the reserves, and the Sitquin were demarcated on the more costly principle; the rest, viz., Onkazin, Tsatpoke and Choungzouk on the less expensive.

A few old broken boundary boards in the other reserves have been replaced by new ones.

No permanent demarcation took place in any of the other Divisions. No demarcation in other divisions.

3. *Inspection of boundary lines.*

45. With the exception of a few reserves in the Tharrawaddie Division, all permanent boundary lines have been inspected during the year. All boundary lines inspected.

4. *State reserves proposed, and*
5. *Survey and examination of forests.*

THARRAWADDIE DIVISION.

Selection and settlement of reserves in Tharrawaddie Division

46. In the *Tharrawaddie* Division the selection and settlement of the reserves has been made with all due regard to the privileges of the people in the surrounding country, the Civil Officers and Forest Department agreeing in almost every instance except with regard to Bamboos. Doubtless, the present line of demarcation of our proposed and sanctioned reserves includes almost all bamboo resources within the district— resources from which the villages in the plains were formerly supplied. The question at issue is :—are these villages to be granted privileges, or shall it rest with the Forest Department to sell the produce of the reserves ?—I am most decidedly in favor of the latter arrangement, and maintain that we cannot allow our whole reserves to be over-run with right-holders over which we can exercise no control.

The detail of the arguments on both sides will be found in the special report on the subject.

Selection of the Thongzai and Koon Beeling reserves.

47. Mr. A. Ormsby Brown, Assistant Commissioner, and Mr. Popert, accompanied by myself and Mr. Hill, started for the Tharrawaddie Division in the middle of November, and on the 24th of December finished the selection of the Thongzai State reserve. We came then into Rangoon and started again on the 4th of January. Mr. Brown and Mr. Popert finished the selection of the Koon Beeling reserve, (which has already been sanctioned and permanently demarcated,) and selected the reserves in the Tharrawaddie Division up to Boben, leaving only the forests on two rivers to be dealt with in the Tharrawaddie Division. All these proposed reserves have been demarcated by a blazed line and temporary boundary marks on such places where it is intended to put up permanent marks.

RANGOON DIVISION.

Khadat reserve on the Pegu Choung

48 Mr. Whittall examined the forests on the Pegu Choung and proposals for the Khadat reserve, since sanctioned, were submitted.

Magayee forest reserve.

Proposals were also submitted for the Magayee forest and only await the Chief Commissioner's ultimate sanction.*

PROME DIVISION.

Examination of boundary lines of teak reserves.

49. Mr. Hill examined the boundary lines of the Teak reserves in the Prome Division and made a settlement with the Karens, still in the Thayetmyo and Prome Yoma forests.

Result of settlements made with Karens.

The Karens were bought out of the Yoma block in Thayetmyo, and thus 80,000 acres were added to the reserves free of all privileges.

A settlement was also made with regard to the Karens in the Prome reserves, but this has not as yet received the sanction of the Civil officers. There is, however, no doubt that we shall be able to create a block of some 1,50,000 acres of reserves free of all rights, and another of 20,000 acres in which the Karens will have the right of cutting yahs, and of providing themselves with forest produce for their own use.

During the year, when the permanent demarcation of the Cutch Reserves was taken on hand, it was found the Thabyeelah, Satsoowah and Bangong contained both toungya, and permanent cultivation. The cultivators were bought out of Tsatsoowah containing 4,800 acres.

SITTANG DIVISION.

Proposed reservation of the Yaynay forest sanctioned.

50. During the year under review a tract of 9 square miles has been selected in the Thine District and proposals have been submitted for its reservation.

The reserve has since been sanctioned under the denomination of the Yaynay State reserve, a compensation of Rs. 75 having been awarded to 2 inhabitants of the small village of Yaynay.

* *Note.*—since sanctioned

B.— Protection and Improvement of State Forests,

1. *Protection against Fires.*

Prome Division.

51. The whole strength of the Prome Forest establishment was engaged throughout the season on demarcation work, consequently but little was done in the way of Forest improvement ; moreover, I wished to concentrate such work as much as possible in one Division.

Little progress in Forest improvement.

The Shwè Kyoontaw teak plantation was successfully protected from fire at a cost of Rs. 17-8-0. The low cost of protection as compared with last year is accounted for by the fact that sufficiently broad paths had been cut last year, which merely required occasional clearing and sweeping, during the year.

Cost of protecting the Shwe-kyoon-taw plantation.

Tharrawaddie Division

52. In the Tharrawaddie division, the Mokkah Beeling reserve has again been successfully protected. The cost of the year's protection will be about 1,300 Rs. of which Rs.464 are shown in the accounts of the year under report.

Successful protection of the Mokka Beeling reserve.

In Myodwin and Boben the protective operations have been carried on in a similar manner as last reported, and, fires have been successfully kept out, but I regret to have to report that through the careless burning of a teak toungyah within the Boben reserve some 10 acres of Teak *Yahs* were burned through, and though not destroyed, severely damaged. I have ordered a strict inquiry to be made, and the men who allowed their toungyah fire to get beyond their control will be fined. This fire, however, proves the danger of teak toungyah in reserves and the extreme care it necessitates.

Protective operations in the Myodwin and Boben reserves.

53. As in former years, arrangements were made with the Sorcays to protect the scattered teak *Yahs* planted by them in unprotected reserves from fire. As might have been expected, it is impossible to protect these scattered blocks and the following accidents have to be reported.

Result of arrangements made with Sorcays.

In Shoaylay, 1 *Yah* of 1875 in area 5¾ acres, was burned. An agreement had been made with the Sorcay to protect the *Yah* from fire, and I have called for a report, which has not yet been submitted, on the means adopted by him to protect the area, the origin of the fire, and the damage done.

Area of toungyas burnt.

In Toungnyo, 1 *Yah* of 1875 in area 3 acres, 1 rood, 14 poles was burned. This fire was caused through men cooking in the Choung near the *Yah*. The men were caught and I have ordered them to be prosecuted. The Toungnyo *Yahs* were protected by an 18 feet broad trace, made by the Forester Moung Kyaw Doon under Mr. Anstruther's orders, and at a cost of Rs. 59-8-0.

On the Mya Choung, 1 *Yah* of 1875, cultivated by Sorcay Tettoo, in area 2 acres, was burned ; this area Sorcay Tettoo had agreed to protect and had burnt a trace round it before the fire broke out.

In the Myoung Choung, a fire was reported in the Panyea *Yahs of* 1873. The area of these *Yahs* is 13 acres, but the report does not state whether the whole has been burnt or not. This year the Sorcay would not enter into an agreement as usual to protect his *Yahs* and hence Moung Way arranged with some of Panyea Tay's men to protect them. It was during the burning of the protecting trace that the fire got into the plantation

Cause of fire in the Panyea plantation of 1873

In the Minhla Forest, the *Yahs* of 1873 and 1874, cultivated by Sorcay Gna Aye, caught fire. The total area of these Yahs is 29 acres of which 19 have been burnt through, more or less damaging the whole crop and killing some 500 young plants.

Damage caused to the Yahs in Minhla forest.

Fire-tracing of reserves selected for improvement.

54. During the year fire traces have been cut round the following reserves, selected for improvement.

Kangyee	..	...	...	3,800 Acres
Nyanlay	...	..	...	5,840 ,,
Bwet	..	...	...	2,900 ,,

Cost of tracing Kangyee.

Kangyee has been traced at a cost of Rs. 2,580 amounting to about 5 Rupees per acre, actually cleared, or 11 annas per acre to be protected. A fire line of 300 feet broad and 13·64 miles long has been cleared of all bamboos and grass. All trees which die when girdled have been girdled and all others felled. The whole line was then burned. The forest ranger has orders to invite any man who wishes to cultivate on the trace.

The operations in Nyanlay and Bwet were executed on the same principle, but the traces were made only 200 and 150 feet broad.

Nyanlay.

In Nyanlay a path of 33 miles was thus cleared at a cost of Rs. 5,594 of which Rs. 4,751 appear in the acounts for 1876-77. This is considerably above my original estimate averaging Rs. 9-2-0 per acre operated upon and nearly Rs. 1 per acre to be protected. "The great cost of the work," Mr. Wild reports, "I attribute to inefficient control and supervision of the coolies by Mr. Anstruther whom I was at last obliged to take off the work." In my opinion, however the area of Nyanlay, which has not been surveyed must be much larger than it is estimated.

Bwet.

The fire trace round the Bwet reserve is 200 feet broad, and 8·6 miles long and cost Rs. 1,144 or Rs. 5-4 per acre actually cut and burned, or less than 8 annas per acre to be protected.

These belts will, after a few years burning, bear nothing but grass and the protection will then be easy and cheap. Though the first outlay is larger, the annually recurring cost will be much less than in Mokkah Beeling.

There was no object in keeping the fire out during the present season, and to make the firetraces burn as completely as possible the fire was allowed to have its own way.

As these reserves have been selected for special improvement no means of protecting them can be too thorough.

RANGOON DIVISION.

Recurrence of fire in the Kyek-pyoogan Plantation.

55. In the Rangoon Division, a portion of the Kyek-pyoo-gan teak plantation has again been burned through, but the grass getting sparser in it every year, no great damage has been done. Kyek-pyoo-gan is of such small extent that we cannot afford a separate establishment for it; it is supervised from Magayee. This year, however, the fire ocurred so early that we were quite unprepared for it.

Success of protection at Magayee.

The fire lines at Magayee have proved completely successful, though fire raged all round it,—a proof of what can be done with proper supervision.—The work was done by Departmental agency with daily labor and not as formerly under contract. The cost of it was Rs. 4,424.

SITTANG DIVISION.

Protection of the Pyoon Choung reserve.

56. In the Sittang Division, the Pyoon Choung reserve has been successfully protected from fire throughout the dry season by a fire trace of 300 feet broad at a cost of Rs. 576.

Cost of protecting the Yaynay reserve.

We have also protected the subsequently sanctioned Yaynay reserve at a cost of Rs. 359 by a similar fire path.

2. *General Protection.*

PROME DIVISION.

Convictions in cases tried for breaches of Forest Rules.

57. In the Prome Division, seven prosecutions for breaches of Forest Rules were instituted during the year, and in six cases the accused were convicted. Two of the convictions were against forest subordinates for extortion and cheating.

THARRAWADDIE DIVISION.

58. In the Tharrawaddie Division, a case was tried of personating the Assistant Conservator and extorting money from the villagers, on the pretence of having them fined for illegal felling of teak, in case they did not give the money asked to hush up the matter. The offenders, three Burmans, were convicted and punished, one with Rs. 200 fine and 6 months imprisonment, another with 2 years imprisonment, and the third with a fine of Rs. 100. The principal instigator of the fraud managed to evade the police and has not yet been found.

Result of trial of a criminal case.

A number of breaches of Notification No. 34 dated 8th March 1876 were forwarded to the District officers of Henzadah and Prome for prosecution, under the provisions of the Notification, the issue of which, however, I have not been informed of.

Breaches of Rev. Dept. Notification of 8th March 1876.

Besides these cases, 15 prosecutions for Breaches of Forest rules were instituted implicating 20 persons, and 14 convictions were obtained. This is satisfactory, proving that there has been no unnecessary harassing of the people.

Convictions in 15 cases of breaches of Forest Rules

Numerous cases of including teak within toungyah grounds were forwarded to the Deputy Commissioners of Prome and Henzadah for prosecution under the Forest rules. No prosecutions, however, were instituted. The Deputy Commissioner of Prome refused to proceed under the Forest rules, which he apparently, considered cancelled by Mr. Baden Powell's Draft rules, and the Assistant Commissioner, Tharrawaddie replied :—" I am aware from personal knowledge that the rule has been a dead letter for years. To carry it out strictly would be to put a stop to nearly all Toungyah cultivation and depopulate the country. If it be intended to act on the rule stringently for the first time, I would suggest that nothing be done retrospectively &c. &c."

Views of District officers in regard to cases of including teak within toungyas

Under these circumstances I considered it better not to insist on punishment during the year, but the people have been informed that next year Rule IX will be strictly enforced in the Tharrawaddie Division.

Warning given of future strict enforcement of Rule IX.

The contractors of the Railway Department committed several breaches of the Forest rules, by converting some timber of larger sizes than they were permitted to utilise under their contract. There is no doubt, however, that we have through the agency of these men converted two thousand tons of teak wood into money—wood for which, otherwise, no price could have been realized. They were consequently only warned.

Offences committed by Railway Dept. Contractors.

RANGOON DIVISION.

59. In the Rangoon Division, only one case concerning 10 persons was tried under the Forest rules and convictions were obtained against all of them.

Result of a single case tried.

SITTANG DIVISION.

60. In the Shwegyeen Sub-Division, a Forester was tried for extorting money from Karens and has been sentenced to 6 months imprisonment.

Conviction of a Forester for extortion.

WESTERN DIVISION.

61. In para 37 of last year's Annual, I reported a petty trade in stolen teak trees at Opoh. The offenders were convicted and the pilfering has been stopped, but I am sorry to report from personal inspection of the forests on the Opoh Choung, not before there was hardly any teak left. The former Permit-holders had made a clean sweep of it.

Illicit traffic in teak at Opoh stopped.

3. *Cultivation.*

(a.) *Sowing and planting of teak and other Forest trees by Departmental agency.*

RANGOON DIVISION.

Area sown at Magayee.

62. At Magayee 302 acres were sown during the rains with Teak and Pymma seed and a nursery of over 20 acres was made of Teak, Pymma, Thitkadoe and Padouk, in case a failure in the sowing operations should have necessitated the filling up of blanks.

Success of the plantation.

The plantation however has proved an entire success, and is by far the best of any cultivation as yet made at Magayee. This total success is due to two causes :—Firstly, to a very early sowing, and secondly to Mr. Carter's unremitting supervision and care in the execution of the work. Teak seed will germinate, as is well known, if sown any time during the rains, but the plant gets a much firmer hold of the ground and gets stronger and larger if sown at the first burst of the monsoon. The plants form almost twice as many pairs of leaves as those sown at a later period.

Incorrect allotments formerly made under Budget heads.

In previous years, so Mr. Whittall reports, the details of the minor operations at Magayee have not been clearly shown, and many serious inaccuracies in the allotment under Budget heads have been made. Often, expenses incurred on experimental cultivation carried on at Magayee have been charged to the teak plantation, thus unduly swelling the charges of this last. The figures for previous year's must remain as they are ; but for the year under review, tables show the exact expenditure incurred on the different works.

The area over which the experimental cultivation extends cannot be known as some plants are put out along the road-sides and foot paths. The Chevanessia is scattered over a large area, and its distribution is unequal as every tree will not suit to train the Chevanessia against.

Nature of operations in other plantations.

In the 1875 plantation filling up blanks and weeding was carried on by coolies ; the large blanks in this plantation were due to the large number of deaths among the plants mixed with the teak. This teaches us, that, in seeking for a tree to mix with teak, the experiment should be on a small scale only, otherwise it is likely, through failure to become very costly.

In the other plantations of 1874-75 and 1872 only weeding and creeper cutting went on. It is no use spending any more money on filling up blanks. The blanks after all are small, and will not be perceived when the plantations have grown up.

The cost of the works of the year will be found in the Appendix.

THARRAWADDIE DIVISION.

Description and cost of *reboisement* operations in selected reserves.

63. In the Mokkah Beeling reserves 12 acres of Bamboos have been felled in strips of 100 feet broad, leaving 200 feet of Forest between the strips. The Bamboos were cut to pieces, piled round the stocks and burned and seed was sown over the area in patches 4 feet apart. This operation was made in large Kyathounwah, and cost 692 Rupees, or above 57 Rupees per acre actually cultivated. In the Nyanlay reserve, 48 acres of strips 50 feet broad were prepared in a similar way, leaving 100 feet between the strips. The cost of this operation amounts to Rupees 1,115 or 23 Rupees per acre. The bamboo is of a much smaller kind. In the Bwet reserve 81 acres have been similarly prepared at a cost of Rupees 1,569-12-0 averaging 19·37 per acre ; of this sum Rs. 129-8-0 only appear in the Accounts of the year under report.

Opinion in favor of the area considered to have failed in 1874-75

The area of 6 acres reported in the Annual of '74-75, para. 28, was revisited and though originally reported as a failure, it may now be put down as a success. The

ground is sufficiently covered with teak plants, which were not observed during the first visit. A fact, as far as I know, not previously recorded, was ascertained by me, that bamboos if cut a year or two before flowering die from the root. It was well known that bamboos, the last two years before flowering do not send forth their annual shoots, thus indicating a seed year in advance ; and by cutting strips in such bamboos of say 20 feet broad, we would obtain two season's start over the young Bambooo which would spring up when the mature Bamboo seeds and dies.

(*b.*) *Sowing and planting of teak and other forest trees by Karen agency.*

THARRAWADDIE DIVISION.

64. In the Tharrawaddie Division, Teak Toungyah cultivation was only carried on during the year under report within the reserved and fire-traced Forests of Mokkah Beeling, Boben, Gwaydouksan and Bwet.

Teak toungyas cultivated in fire-traced reserves.

In the Mokkah Beeling, 30 yahs with an area of 155 acres were cut and sown. The plants counted amounting to 31,310, or 202 plants per acre.

The seed was sown in treble lines 30 feet apart, 4 feet within the lines. The cost of the cultivation amounts to Rupees 400.

In the Boben, 30¼ acres were cultivated at a cost of 230 Rupees, and contain 16,077 plants or 531 per acre. In this case however the seed was sown 6 feet apart each way.

In the Gwaydouksan reserve, 7 yahs were cut over an area of 8 acres, 3 roods 17 poles, upon which when counted in February last 2091 plants only were found averaging 239 per acre. The cost of these yahs is Rupees 47.

In the Bwet reserve 29,828 plants have been raised by 13 villagers of Yeabotsan on an area of 50 acres, averaging 596 per acre, for which Rupees 368 will have to be paid.

These yahs were marked out and sown partly on the old and partly on the new system.

I append a statement of the teak toungyahs cultivated within the year, which shows that 245 acres have been operated upon, and stocked with 79,608 young teak plants, at a cost of :

Statement of cost of teak toungya cultivation.

For cultivation	Rs.	796	1	3
Taxes	„	202	0	0
Surveying & counting..	„	48	5	9
Total ...	„	1,046	7	0

or Rupees 3·26 per acre, for cultivation alone, and Rupees 4·27 taking taxes and contingencies into account.

(*c.*) *Natural reproduction assisted in fire-traced State Reserves.*

THARRAWADDIE DIVISION.

65. In the Mokkah Beeling reserve, teak seed was dibbled in 4 feet apart under dead bamboos on an area of some 400 to 500 acres at a cost of 613 Rupees.

Result of seed dibbling operations in the Mokka Beeling reserve.

I visited and carefully examined the reserve during the cold weather, and came to the conclusion that about 100 acres were fairly stocked with young plants. These were those sown early in the season. I found also that the seed in most places had been sown too deep and had not germinated during the year, but was to all appearances in good preservation. This seed will in all probability

germinate during the present rains, but I decided to re-sow the area in order to be certain of success.

In addition to these 400 acres of last year, other 500 acres have been sown on carefully prepared places before the rains set in.

The cost of this operation amounts however to more than 3 Rupees per acre. Mr. Wild reports that the work has been carried out carefully and well.

Description of experiment made in the Kanghee reserve.

In the Kanghee reserve which has been most thoroughly fire-traced, I have girdled 11,932 trees round 2,983 mature teak trees at a cost of Rupees 523. The area thus exposed is not covered with Bamboo, and teak seed will be dibbled in at 4 feet apart. I tried this experiment first on a small scale over 5 acres in the Mokkah Beeling reserve immediately after my arrival in Burma, and, after this had succeeded, I made operations this year on a larger scale. If my experiment be again attended by success we can, at the cheapest rate as yet discovered, increase the proportion of teak trees in the *peuplement* of many square miles of our reserves. This, together with the admirable plan of cultivating teak in toungyas within fire-traced reserves and of sowing seed wherever the bamboo flowers, must insure the future of our teak producing areas. The greatest difficulty lies in the cost of fire-tracing which I maintain is a *sine qua non* to any healthy reproduction.

Teak it is said has not been found to reproduce in fire traced reserves to the extent anticipated. I am satisfied that this statement is correct, but this can not possibly be due to the exclusion of fires, and some other conditions—room and light—must have been wanting, or other trees must have been in preponderance.

(*d.*) *Cultivation of plants other than Teak and Forest trees.*

Prome Division.

Cultivation of the Ceratonia siliqua.

66. A small quantity of Ceratonia siliqua seed was sown in the Prome Forest office compound and we have 70 plants in good condition.

Rangoon Division.

67. No new experimental plantations have been carried out at Magayee.

Sittang Division.

Cinchona plantation.

68. As regards the Cinchona plantation in the Sittang Division, I regret to say I have never been able to visit it. I quote from Dr. Adamson under whose sole care the plantation has grown up.

Extract from Divisional officer's report.

" There was but a small extension of the Cinchona plantation in 1876. An area of 10 acres was felled and burned, but only about one half of this was planted up, the other half of the area will be planted up in 1877. The whole of the original area granted for Cinchona cultivation will now have been nearly, if not entirely, filled up.

In June, July and August 1876, 5890 plants, chiefly Succirubra, were transplanted to the new area and about 10,000 were transplanted into the older plantations—1873 to 1875—to fill up vacancies.

The Rev. Father Biffi and Rev. Mr. Bunker were supplied with 2,000 seedlings and cuttings each from the Thantoungyee plantation. They were of the species Cinchona condimini. They reported that the plants of this species have not done well in 1876 though the Succirubra, obtained in 1875, have done and are doing admirably. I shall be able to supply each of them with one or two thousand of Cinchona Succirubra in 1877. About 70,000 seedlings are reported in nursery beds, but the greater portion of these will not be fit for transplanting till 1878.

The expenditure has not been so heavy in 1876-77 as in the previous year, *vide* the following statement :—

	1875-76	1876-77
Establishment	1,150	1,235
Coolies	7,236	4,180
Sundries	20	25
Peon at Plumado	90	
Total Rs. ...	8,496	5,440

The rat plague having ceased, rice was obtainable on the hills.

4. *Conservancy Works.*

Prome Division.

69. The Prome plantation was thinned again during the year at a cost of Rupees 53-12-0, but the sale of the produce of this and last year's thinning has more than repaid the outlay on both years' work. The scattered teak Toungya plantations in the Prome Division were cleared at a cost of Rupees 31-8-0. Thinning and clearing operations in plantations.

Tharrawaddie Division.

70. In the Tharrawaddie Division 374 acres of Teak toungyas were weeded during the year—337 acres at Rupees 2-8-0 per acre, and 37 at Rupees 2 per acre. Cost of weeding teak toungyas.

Sittang Division.

71. The plantation of 1873 in the Pyoonchoung reserve, Sittang Division, was weeded at a cost of Rs. 116. Cost of weeding the plantation in Pyoonchoung reserve.

5. *Communications and Buildings.*

Tharrawaddie Division.

72. The rest houses in the Tharrawaddie Division have been re-thatched. Repairs to rest-houses.

Rangoon Division.

73. The buildings at Magayee have been kept in repair and have been improved. One of the overseer's bungalows has been planked with boards instead of bamboo matting which required constant repairs. Improvement to buildings at Mayayee.

The lower portions of two of the houses have been planked in for servants and peons' quarters. The roads have been repaired, raised and strengthened, especially near the main bridge, where they were quite impassible during the rains. Repairs to roads and bridges.

All bridges needed repairs, which have been executed.

6. *Girdling.*

74. No girdling took place in any of our State reserves. Suspension of girdling operations.

III UNRESERVED FORESTS.

Sittang Division.

75. In the Sittang Division the Notification reserving the additional 12 kinds of trees had been misinterpreted and for a short time yah cultivation was stopped by the Divisional Officer on such places where any of these trees grew. This caused some excitement, which was, however, both temporary and local—and to the best of my belief, also exaggerated. The 12 kinds trees, or at least some of them, are pretty widely spread throughout the Province, but it is almost ridiculous to place it on record, that the Forest is almost constituted of reserved trees and that no places for toungyah without them could be formed ; still such an assertion has been Effect of misinterpreting the Notification reserving 12 kinds of woods.

made. It was, however, never intended that toungyah cultivation should be interfered with by the Notification, and orders to that effect were telegraphed to the Divisional Officer as soon as I heard of the prohibition.

PROME DIVISION.

Blasting operations in the Hlowa choung.

76. Overseer DeCosta has again been employed on blasting the Kyouk Malhat rocks in the Hlowa Choung. By the end of April he reported having blasted 18 rocks containing 62·236 cubic feet. The expenditure on this amounted to Rs. 1,056, and 160 lbs of blasting powder.

The work was inspected during March, and even then the water-way was sufficiently improved to bring out 2,000 logs of teak, which are at present lying behind the obstruction. The rocks are extremely hard, pure white, boulders.

3. THARRAWADDIE DIVISION.

Cost of clearing obstructions in Beeling and Toungnyo streams.

77. In the Tharrawaddie Division the obstruction in the Beeling stream which was cleared during last and the early part of this year, and reported on in last year's report, again formed in July, and was, so far removed as to enable us to get out our timber at a cost of Rs. 716,14 0·399 teak logs and 32 Kanyin were dragged out of the stream and taken to the main river by the Department, for which the Contractors were debited with Rs. 299-4-0 ; Rs. 32-0-0 were recovered from the owners of the Kanyin. This sum has been deducted from the above expenditure which decreases the cost of the work to the Forest Departmeut to Rs. 385-10-0.

Up to the end of April 1875, Rs. 766-9-6 had been spent on the first obstruction, and hence, adding the cost of clearing away the second formation, a sum of Rs. 1,483-7-6 has been spent by the Department on this stream, which deducting the amount recovered from Contractors, leaves an expenditure of Rs. 1,152-3-6 actually debited to the Department.

Rupees 832-7-2 were also expended in keeping the Toungnyo stream clear of toungya refuse and preventing logs from sticking, but little good appears to have been done as the creek silted up and completely destroyed the road to Papoon.

All the Creeks of the Division, with the exception of the Thongzai, are in a bad and unfloatable condition and this will be the case as long as the Irrawaddie overflows into the Meimaka, stowing up all creeks flowing into the latter stream. I visited the Meimaka during last rains, and for miles went up the stream with the stowage from the main river. This of course, causes slack water and a deposit of silt This same cause has always existed, but from what I hear has been aggravated through the making of the Prome road embankment on the one part, and the dams in the Henzadah District on the other.

RANGOON DIVISION.

Rest and station houses

78. In the *Rangoon Division* one rest house at Zoungtoo, 50 miles above Pegu, is in course of construction, also three small houses at the stations, Taulatai on the Hline, Awine on the Pegu Choung, and Hlaigoo on the Pounglin river.

Girdling.

RANGOON AND SITTANG DIVISIONS.

Girdling of selected teak trees

79. In the Rangoon Division, 50 selected teak trees were girdled on the Kawleya, 50 on the Benidah, and 50 on the Bawnee Choung ; and 100 selected teak trees on each of the following Choungs—Hpyoo, Khaboung and Koon, in the Sittang Division.

III Forests in which the right to extract teak is leased to Permit holders.

SITTANG DIVISION.

Expiration of permits for extraction of teak.

80. The leases of the Koon, Eingtoon and Toonkan forests, in the Sittang Division, expired during the year. However the Burmah Company, Limited, were allowed under special permission to extract during 1876, 400 logs neaped below Eingtoon. These were marked for them by the Forest department. The logs and pieces left by the Permit holders in the forests are being worked out Departmentally. This is the end of the leases in the Pegu Forest Circle.

IV.—YIELD AND WORKING.

1.—*Extraction of teak from State Reserves and Unreserved Forests.*

PROME DIVISION.

81. During the year the following number of teak logs were extracted:— Teak timber extracted in Prome Division.

	Rs.
Nawing forest, 1,210 logs at a cost of	15,145
Mindoon forest, 1,241 logs at a cost of	18,885

Two thousand one hundred and twenty-four logs neaped timber have been measured in the Hlowa Choung, and 800 neaped logs are reported to be lying in the North and South Nawing choungs.

THARRAWADDIE DIVISION.

The total outturn of the *Tharrawaddie Division* amounts to 7,295 logs, derived from the different forests as follows:— Tharrawaddie.

Shoaylay	707
Shaboung	616
Toungnyo	2,058
Mimboo	198
Boben	1,289
Toung	584
Htoo	497
Tsatpoke	150
Minhla	136
Mokkha	144
Beeling	621
Thongzai	855

For the extraction of this timber the contractors have been credited with Rs. 78,798.

The neaped logs have been counted, marked, and numbered: they amount to 2,025, and lie principally in the Mokkha, Minhla, Mimboo, and Gamoung choungs. In these streams the water was very low during the year, and the timber could not be brought out, though the labour was available.

As reported last year, the Railway Department were again allowed to send their contractors into the forest to collect refuse teak for sleepers and scantlings for fencing. During the year 95,245 cubic feet of refuse, the greater portion of which would have otherwise been unsaleable, were extracted and converted into 36,500 sleepers and 57,450 scantlings.

Two hundred and twenty-five logs were dug out of the old bed of the Shoaylay.

RANGOON DIVISION.

82. In the *Rangoon Division* 2,174 logs were extracted at a cost of Rs. 27,848 :— Out-turn in Rangoon Division.

	Logs.
Hpounglin	564
Pegu	872
Zamayee	738

No timber was brought from the Okkan Choung, all logs in it being neaped.

SITTANG DIVISION.

83. In the Sittang Division 5,083 logs were extracted, including, however, 1,050 small pieces which were locally disposed of; 1,800 logs are reported as neaped in the Gway-they, Yenee, Swah, and Khaboung choungs, owing to the scanty rainfall and subsequent low water. In Sittang Division.

2.—*Extracton of woods of other kinds.*

84. In the *Prome Division* 120 logs of Engyin and Theya timber were extracted at a cost of Rs. 309, or Rs. 6-7 per ton.

85. In the *Tharrawaddie Division* 1,282 pieces of Pynkadoe were extracted, 14 and seven feet long, as well as 101 Pynkadoe sleepers, and three logs Yemmanay from the Beeling forest. Timber of other kinds extracted in each division.

86. In the *Sittang Division* 973 logs of Thitka and Thitkadoe were extracted; 300 are reported as neaped.

The extraction of 20 logs of Laizah and 36 Padouk has also been reported.

3.—Drift timber.

Number of drift logs salved in each division.

87. In the *Prome Division* 462 logs of drift timber were salved, of which 373 were returned to the owners, 89 remaining Government property.

88. In the *Tharrawaddie Division* 333 logs of drift timber were collected, 225 of which were dug out of the old bed of the Shoaylay Choung; all of them belonged to Government.

89. In the *Rangoon Division* 159 logs were salved at a cost of Rs. 3,089-11-5; of these, 79 were claimed by owners and returned, leaving 90 as Government property.

90. In the *Sittang Division* 1,248 logs were salved at Toungoo; 1,090 of these were made over to claimants, and 29 foreign logs, the ownership of which depended on a law case, are kept in custody; 1,002 drift logs were salved at Shwe-gyeen, of which 640 were made over to owners.

Shwe-gyeen salved also 150 Thitka and Thitkadoe, of which 27 were claimed and returned.

91. The *Western Division* salved 145 Thitka logs.

92. The *Rangoon Depôt* salved 598 logs, of which 222 remain unclaimed, 376 having been made over to owners.

4.—Rafting.

Teak and other timber rafted to Rangoon and Bassein Depots.

93. From the *Prome Division* 2,308 teak logs were rafted down to Rangoon inclusively of 80 logs of teak drift timber.

94. The *Tharrawaddie Division* sent 6,607 logs to the Rangoon Depôt, comprising.

8	Mast pieces.
91	Yard „
3,018	Doogies.
2,441	Loozars.
802	Short Loozars.
45	Smail pieces.
707	Yatthits.

95. From the *Rangoon Division* 2,173 forest logs and 80 logs drift were floated to the Rangoon Depôt; and from the *Sittang Division* 4,074 forest logs, 156 logs of drift teak timber, 973 logs of Thitka, 24 logs of Thitka drift, and 20 logs Laizah.

96. *Western Division.*—The 145 logs of Thitka salved during the year were rafted to Bassein.

5.—Timber extracted under leases.

SITTANG DIVISION.

Teak timber extracted by permit-holders.

97. The Burma Company extracted under their lease of the Koon forests (since lapsed) 3,446 logs of teak timber, the royalty of which amounts to Rs. 28,823-7-9.

6.—Depôt working.

Statement of transactions at Central Depôt during the year.

98. In the Rangoon Central Depôt the balance of timber on hand on the 1st April 1876 was—

TEAK.

Logs.		Crooks.	Sleepers.	Tons.
I. Class.	II. Class.			
687	10,212	...	80	10,726

WOODS OF OTHER KINDS.

Logs.	Sleepers.	Tons.
1,163	2,595	1,087

The following timber was brought to Depôt during the year at a cost of Rs. 6,679-7 :—

TEAK.

Logs.		Crooks.	Sleepers.	Tons.
I. Class.	II. Class.			
4,126	11,827	17	7,992	17,218

WOODS OF OTHER KINDS.

Logs.	Sleepers.	Tons.
1,240	4,411	1,376

The following timber was disposed of during the year :—

TEAK.

Logs.		Crooks.	Sleepers.	Tons.
I. Class.	II. Class.			
3,540	16,172	17	3,444	20,756

WOODS OF OTHER KINDS.

Logs.	Sleepers.	Tons.
2,365	5,864	2,416

The balance on 31st March 1877 was :—

TEAK.

Logs.		Crooks.	Sleepers.	Tons.
I. Class.	II. Class.			
1,223	5,857	...	4,638	7,188

WOODS OF OTHER KINDS.

Logs.	Sleepers.	Tons.
38	1,142	47

A remarkable improvement has been observed in the marking of timber with the forest marks in consequence of stringent orders issued to the Divisional Officers.

I observed a slight falling-off in the proportion of 1st to 2nd class timber, which is due to the fact that no fresh girdling of any extent has taken place for years.

Conversion of timber for the Calcutta market.

Twenty logs of Laizah were converted into broad guage sleepers, and sent as samples to Messrs. Gillanders, Arbuthnot and Co. at Calcutta. The results of the experiment have not as yet been ascertained.

Transit depôts have been established at Prome, Toungoo, and Shwegyeen, which enable people of the district to supply themselves with 2nd class teak timber: 1st class being not in demand is only retained at these depôts if previously indented for.

At Bassein a depôt has been established a mile above the town in which in future teak will be available in addition to woods of other kinds.

7.—*Disposals.*

(*a*). *In the Central Depôt—*

99. At the Rangoon Central Depôt nine public auctions were held, disposing of 20,446 tons of teak timber at a gross average of Rs. 37-7-9 per ton, which may be classified as follows :—

For European market—

I. Class Doogies, containing 4,099 tons, at Rs. 1,98,381-12, realizing an average of Rs. 48-6-4 per ton.

For mixed Indian and local markets—

Twenty-seven mast pieces, containing 56 tons, at Rs. 1,336, realizing an average of Rs. 23-13-8 per ton.

Nine hundred and sixty-three yard pieces, containing 1,613 tons, at Rs. 42,627, realizing an average of Rs. 26-6-10 per ton; 5,660 II. Class Doogies, measuring 6,056 tons, for Rs. 1,49,140, or Rs. 24-10 per ton.

Five thousand four hundred Loozars, measuring 5,029 tons, at Rs. 1,98,360, or Rs. 39-7-1 per ton.

For purely local market—

One thousand one hundred and sixty Yatthits and 203 logs inferior 2nd class timber, containing 719 tons, at Rs. 18,805, or Rs. 26-2-5 per ton.

Converted timber—

Six thousand two hundred and eight sleepers, containing 300 tons, have been sold for Rs. 32-2-3 per ton; 19·4 tons inferior scantling have been sold for Rs. 454-5-3, or Rs. 23-7 per ton.

Timber sold on indent—

Two thousand one hundred and eighty-nine teak logs of the 1st class, containing 2,929 tons, at Rs. 1,71,283-11-11, or an average of Rs. 58-7-6 per ton.

This timber was almost entirely bought by the Bombay-Burma Trading Corporation, Limited, and Messrs. Bulloch Brothers and Co. for the European market.

100. Woods of other kinds were disposed of to the amount of 2,223 tons for Rs. 60,952-12-6, or Rs. 27-6-7 per ton, and may be classified as follows :—

Name of wood.	By public auction.			Average per ton.	On Indent.			Average per ton.
	Logs.	Tons.			Logs.	Tons.		
			Rs. A. P.	Rs. A. P.			Rs. A. P.	Rs. A. P.
Thitka and Thitkadoe ...	1,560	1,453	29,840 0 0	20 8 9	846	451	8,589 5 11	19 0 8
Padouk ...	56	28	1,200 0 0	42 13 8	*244	161	19,279 6 7	119 11 11
Woods of other kinds ...	164	180	2,044 0 0	15 11 6	...	...	...	...

* Two hundred and sixteen logs, averaging 146 tons, at Rs. 130 a ton, represent timber supplied from Moulmein to Madras Gun-carriage Manufactory, though the agency of the Central Depôt, Moulmein, has been credited with this amount in form 52.

101. The demand for Thitka and Thitkadoe has been constantly rising, the smaller planks being used for boxes, the larger ones being shipped for furniture wood. The demand for 2nd class teak for the local market has been dull throughout the year, but since then shows a decided upward tendency.

Ten logs of 2nd class teak were granted to the Mission Society for the Propagation of the Gospel, under orders of the Chief Commissioner. They contained 13·5 tons of timber, the estimated value being Rs. 486, or Rs. 36 per ton.

Disposals.

(*b.*) *In other parts of the province.*

PROME DIVISION.

102. The following logs were sold at the Prome transit depôt on indent:— Teak and other timber sold in Prome Division.

Teak.—Eight logs, containing 120·74 tons, for Rs. 765-6, or Rs. 60 per ton; 166 logs, containing 196·29 tons, for Rs. 10,796-1-3, or Rs. 55 per ton; 13 logs, containing 12·53 tons, for Rs. 576-10-9, or Rs. 50 per ton; 10 logs containing 11·87 tons, for Rs. 415-7-3, or Rs. 35 per ton; of these, 187 were bought by the Railway Department.

Besides these, the following timber was disposed of:—five pieces teak refuse at Rs. 21; 50 Sâl logs, containing 23·76 tons, for Rs. 332-11-9, or Rs. 14 per ton; 10 Sâl logs, containing 6·25 tons, at Rs. 125, or Rs. 20 per ton.

In the district we disposed of—351 Nathat logs, estimated to contain 35·08 tons, at Rs. 35 per ton, realizing a sum of Rs. 1,228: three were sold to the Assistant Commissioner, Allanmyo; in addition were sold 25 pieces and 250 planks to private parties at Thaigone for Rs. 175. The thinnings of the Prome teak plantation, 583 seedlings, were sold at Rs. 96. Three logs of teak were cut up for Departmental purposes.

The disposals in the Prome Division itself amount therefore to 548 logs, 30 pieces, 250 planks, and 583 saplings of teak, realizing Rs. 12,211-8-3, and 69 logs of Sâl realizing Rs. 457.

THARRAWDDIE DIVISION.

103. The following teak logs were sold on indent to the Railway—five-hundred and thirty seven 1st class logs, containing 618 tons, for Rs. 35,143-2-6, or Rs. 55 per ton; 151 2nd class logs containing 150 tons, for Rs. 4,517-7, or Rs. 35 per ton; 93,950 pieces of refuse scantling, containing 1,905 tons, for Rs. 19,049-1-6, or Rs. 10 per ton. The cost of extraction and conversion of these 93,950 pieces was borne by the Railway contractors, so that the sum of Rs. 19,049 represents the net revenue. In Tharrawaddie Division.

Two logs were sold to the Myanoung Jail for Rs. 127, or Rs. 50 per ton; 110 pieces drift timber were sold to private parties for Rs. 1,127-9-3, averaging about Rs. 20 per ton.

The supply of Pynkadoe sleeper pieces to the Railway Department was brought to a close during the early part of the year: 1,282 pieces and 101 sleepers were delivered at a cost of Rs. 3,970-12-0, realizing Rs. 3,936-5-0.

Two teak inferior logs were sold to Mr. George, the missionary, at Rs. 27-12-6.

SITTANG DIVISION.

104. One thousand and nine teak logs brought out by Contractors were sold at Toungoo. They were of very inferior quality, and would not have repaid their transport to Rangoon. They have therefore been classified as refuse timber, and the contractors have received half of the gross revenue realized thereon, instead of the contract price stipulated for timber fit for the Rangoon market. They realized Rs. 9,686, or about Rs. 146 per ton estimated. In Sittang Division.

Thirty-five logs of refuse drift were sold at Shwe-gyeen ; they contained about 29 tons, and realized Rs. 773-1, or Rs. 26-5 per ton.

WESTERN DIVISION.

In Western Division.

105. Drift logs were sold for Rs.217, containing five tons, or at Rs. 53-6-4 per ton.

8.—Working stock.

(*a*). *Elephants.*

PROME DIVISION.

Elephants attached to the different divisions.

106. At the commencement of the year three elephants were attached to the division, but one of them was almost useless. He was paralyzed in one of his hind legs, and consequently sold under my orders, realizing Rs. 170. He was replaced by a young elephant sent from Rangoon.

THARRAWADDIE DIVISION.

107. The number of Departmental elephants on the 31st March was 35. During the year five have been purchased at a cost of Rs. 6,425, making a total of 40. Of these, seven have been worked off by contractors and became their own property, one died, leaving a balance of 32.

RANGOON DIVISION.

108. In the Rangoon Division only one elephant was constantly attached to the division at Magayee plantation. Carriage elephants were supplied from the depôt.

SITTANG DIVISION.

109. Two carriage elephants were kept at Toungoo for the use of the Divisional Officer ; a third was sent to Shwe-gyeen.

The timber contractors in this division worked with 125 animals ; 81 of these were employed by Government, 44 by the Burma Company, Limited. As far as I could ascertain, eight deaths occurred amongst the number, four of them amongst the number employed by the permit-holders. This large percentage of deaths is probably due to over-work, the foresters of the company trying to extract the whole complement of timber before the lapsing of the lease.

WESTERN DIVISION.

110. A carriage-elephant was detailed off from the Rangoon Depôt for the use of the officer in charge, and in March a timber elephant, a young tusker, was left by me for depôt work at Bassein.

RANGOON DEPOT.

111. At the beginning of the year the complement of elephants consisted of—

Dragging elephants—	
Males	6
Females	
Carriage elephants—	
Males	1
Females	10

Distribution of number purchased during the year.

During the year 14 elephants were bought by me at a cost of Rs. 17,570; of these one was sent to Shwe-gyeen, one to Prome, and two to Henzada, six were employed with Messrs. Brown, Hill, and Popert on demarcation work, and three were out with me during the greater part of the season. None of these elephants were ill during the year.

At the close of the year 20 elephants were at the disposal of the Depôt: —

Dragging elephants.	7
Carriage do.	13

Four of the latter are at present working on the Kangyee fire-tracing.

(*b.*) *Dead stock.*

112. A boat was bought for the *Western Division* at a cost of Rs. 280.

A paddy-crusher has during the last month of the year been bought for the use of the elephants at the Rangoon Depôt at a cost of Rs. 90-11-9. This effects a considerable saving, as the animals are now fed on paddy only, whereas they got formerly half rice half paddy, and but half digested the latter.

Purchase of a boat and a paddy-crushing machine.

(*c.*) *Communications and buildings.*

PROME DIVISION.

113. The Forest Office in Prome was exchanged for the old circuit-house, the Department being debited with the difference in value.

The house was repaired and out-houses were erected at a cost of Rs. 770-15-0, and the compound was fenced at a cost of Rs. 56-12-0.

Improvements to buildings in Prome Division.

THARRAWADDIE DIVISION.

114 The Forest Office of the Tharrawaddie Divisioin is still at Myanoung, but a new office must be built on the Railway line as soon as the head-quarters of the Civil Division have been decided upon. At Henzada and Rangoon offices are rented for Rs. 25 and Rs. 30 per mensem respectively.

Proposed removal of head-quarters of Tharrawaddie Division.

115. The Forest Office at Shwe-gyeen has been repaired at a cost of Rs. 206-8-0.

116. At the *Rangoon Depôt* the elephant-shed was re-floored at a cost of Rs. 780-12-0.

The repairs of the buildings at the timber depôts and Poozoondoung sub-depôt cost Rs. 1,051.

The ground in front of the officer's quarters, which was liable to be flooded during high spring tides, was raised at a cost of Rs. 93-12-0.

The main road was re-metalled at a cost of Rs. 260, and a new bridge was constructed over the Tsaboo Choung for Rs. 1,203, the old bridge being positively dangerous and useless.

9.—*Contractors.*

PROME DIVISION.

117. The number of contractors for this division amounts to six. The amount outstanding by them on the 1st April 1876 is Rs. 14,446-12.

Number of contractors in each division, and state of their accounts.

THARRAWADDIE DIVISION.

118. In this division 40 contractors were employed during the year.

The account of the teak timber contractors is eminently satisfactory: the whole amount outstanding against them is on account of Government elephants loaned to them, and can at any moment be adjusted by resuming the animals.

The outstandings due by Pynkadoe sleeper contractors, amounting to Rs. 3,082-15-0, can only be recovered by lawsuits.

RANGOON DIVISION.

119. Contractors are employed in this division, to whom only an advance of Rs. 500 has been made, more than covered however by the work done on the timber neaped in the Okkan Choung.

SITTANG DIVISION.

120. In the Sittang Division 29 contractors have been employed, owing Rs. 19,320 to the Department. The outstanding is well covered by work done on 1,800 teak logs and 300 Thitka reported as neaped in paragraph 83 of this report.

WESTERN DIVISION.

121. All contracts in this division are for 1877-78, and are made on the principle of payment on delivery only.

V.—FINANCIAL RESULTS.

Difficulty of reviewing financial results of each division.

122. It is extremely difficult to review the financial results, division by division, as the largest income for each division is realized at the Central Depôt, Rangoon, where the timber is mixed according to quality without reference to the division from which it was sent. This is unadvoidable without a double loss represented by an increased expenditure in sorting and a falling-off in the prices realized. The only way left open to me is to regard the Rangoon Depôt as an agency only, and to credit each division with a percentage of the net income realized by their Rangoon agents, the percentage to be calculated on the number of tons of teak and other timber delivered at the depôt.

For convenience sake, I have this year calculated the profits on two tons of other wood equal to the profits on one ton of teak.

Direction and Demarcation.

Cost of direction and demarcation.

123. The cost of direction and demarcation requires no explanatory notes, they amount to—

Direction, Rs. 38,224-5-7.
Demarcation, Rs. 3,198-9-0.

Rangoon Agency and Depôt.

Revenue and expenditure of Rangoon Depot and Agency.

124. Form 49 shows a revenue of Rs. 8,56,229-8-3, against an expenditure of Rs. 1,20,057-8-1, from which Rs. 3,483-2-6 must be deducted as spent on timber salved by the depôt, leaving an expenditure of Rs. 1,16,574-5-7.

The depôt and agency thus shows a surplus of Rs. 7,39,655-2-8, which is to be credited to the different divisions in proportion of the timber delivered at the depot.

The profits of the depôt itself stand therefore thus—

Proportion of net profit on cost of 201 tons of timber salved and brought into depôt, Rs. 6,149-2-1.
Expended on timber salved by depôt Rs. 3,483-2-6.
Net profit of depôt, Rs. 2,665-15-7.

PROME DIVISION.

Income and expenditure of Prome Division.

125. The Prome Division, as will be seen from statement 49, exhibits an income of Rs. 39,248-7-6, against an expenditure of Rs. 37,895-10-1, showing a surplus of Rs. 1,352-13-5.

To this however has to be added the proportion of net revenue realized by the Rangoon Timber Agency, equal to Rs. 79,490, exhibiting thus a net revenue of Rs. 80,842-13-5.

The increase of Rs. 4,200-1-2 in spite of the abolishment of the permit system is due to an income divided under the working of the Revenue Notifications Nos. 33 and 34: Rs. 6,619-11-6 were levied on timber extracted, and Rs. 17,107 on account of cutch trees use for cutch-boiling.

The other figures exhibited for the division require no further explanation.

THARRAWADDIE DIVISION.

Revenue and expenditure of Tharrawaddie Division.

126. The Tharrawaddie Division, as may be seen from statement 49, shows a revenue of Rs. 80,170-14-9, against an expenditure of Rs. 1,44,517-11-9, leaving a deficit of Rs. 64,346-13-0.

To this, however, must be added the profit made by the Rangoon Agency on account of the division, amounting to Rs. 2,48,299-0-2, exhibiting thus a net revenue of Rs. 1,83,952-3-2.

In this division also II*a*. shows a considerable increase to the sale of refuse teak extracted by Railway contractors, for which they paid Rs. 19,049-1-6. The outstandings by contractors is only part of the value of elephants loaned to them.

The outstandings by Pynkadoe sleeper piece contractors* has been reduced to Rs. 3,082-15-0 ; but I doubt whether this balance will ever be recovered.

Receipts and expenditure of Rangoon Division.

The large expenditure in this division incurred under A. V111. has already been commented on in another portion of this report.

RANGOON DIVISION.

127. This division in Form 49 shows a revenue of Rs. 6,139-0-2, against an expenditure of Rs. 1,09,945-10-5, leaving a deficit of Rs. 1,03,806-10-3.

To this has to be added the net profits made on account of the division by the Rangoon Agency and Depôt, amounting to Rs. 1,26,759, thus exhibiting a surplus of Rs. 22,952-5-9.

The Revenue II. A. shows Rs. 4,847-10-6, against Rs. 3,204-8 last year. This is entirely due to the reservation of 12 kinds of wood, and will considerably increase during the next year. At the time I write a larger amount has already been received.

The other figures with regard to the division require no special notice.

SITTANG DIVISION.

128. Form 49 shows for this division a revenue of Rs. 18,474-6-6, against an expenditure of Rs. 95,449-13-6, exhibiting a deficit of Rs. 76,975-7-0.

Figures for Sittang Division as shown in Form 49.

To this has to be added :—

Profit made on account of the division by the Rangoon Depôt and Agency, amounting to Rs. 2,78,958-0-5, giving anet revenue of Rs. 2,01,982-9-5.

The outstandings to the division are more than covered by work done on neaped timber.

WESTERN DIVISION.

129. The Western Division shows still a deficit, but this was to be expected during the first year.

Deficit exhibited for Western Division.

Form 49 exhibits a revenue of Rs. 4,243-5-0, against an expenditure of Rs. 6,694-12-4.

VI.—GENERAL.

Rangoon teak trade.

130. During the year 39,147¼ tons of teak were exported from Rangoon, showing a decrease of 17,863¼ tons against last year.

Exports of teak timber from Rangoon.

Ports.		Tons.	Value.
			Rs.
Foreign	United Kingdom	16,916½	12,67,949
	Hamburg	...	...
	Cape of Good Hope	450	31,500
	Mauritius	...	...
	Ceylon	1,402	98,153
	Foochow	...	...
	Gibraltar	5	450
	Total ...	18,773½	13,98,052
Indian	Straits Settlement...	280	19,140
	Bengal	5,150½	3,88,307
	Bombay	12,000	8,63,250
	Madras	2,797¼	1,30,480
	Ports within the province	106	7,416
	Karikal	90	4,850
	Total ...	20,373¾	14,58,443
	GRAND TOTAL ...	39,147¼	28,56,495

* Noted in last year's Annual, paragraph 132.

Teak timber imported during the year.

The following teak timber was imported during the year:—

	Logs.	Tons.
By the Sittang	39,502	37,184
By the Irrawaddie	6,891	5,044

Trade in other woods.

131. Exports from Rangoon 461 tons.
Imports into Pegu. 109

Minor forest produce.

Exports of minor forest produce.

132. The export of minor forest produce during the year for Rangoon and Bassein shows as follows :—

Articles.	Rangoon.	Maulmain.	Value.
	Maunds.	Maunds.	
Caoutchouc, raw	5,556¼	...	3,21,712
Do. manufactured (India-rubber) ...	...	...	...
Gums and resins, cutch and gambier ...	3,89,757	1,482	26,14,565
Ditto. other sorts	3,271	...	23,515
Lac, stick	11,512⅔	570	1,46,725
Oils, vegetable	2,898⅛	4,784⅔	1,06,432
Spices, cardamoms	635	634	33,541
Wax (excluding candles)	147	9	78,112

Seeds.

Supply of teak and other seed.

133. The following quantities of seeds were despatched during the year:—

Teak.

Dr. King, Royal Botanical Gardens, Calcutta ... ... 80 maunds.

Bamboo.

Hight, Esq., Assistant Conservator of Forests, Kurrachee... ... 80 lbs.
Officer in charge (Changa Manga Plantation, Punjab) ... ... 10 „

Pine.

Count Kielmansegge, Germany ... ... 2 seers.

T. Hamiltonii.

Dr. King, Royal Botanical Gardens, Calcutta ... ... about 12 oz.

Bamboos.

Rollers supplied by Mr. Routledge for crushing bamboos.

134. A bamboo-crushing machine was sent out during the year by Messrs. Routledge and Co. The machinery was defective, the strength of the capstan-gear being out of proportion to the power necessary to crush the bamboos. It broke twice, and had to be brought back from Awine near Pegu, where bamboo shoots had been collected, to be driven at Rangoon by steam power and strap. Seven thousand bamboos were also brought from Pegu and passed through the rollers, but as the arrangement made by Mr. Routledge for the shipping of the material as dunnage with Messrs. Bulloch Brothers in London had not been communicated to the Rangoon firm, they refused to ship it under any other condition but freight on cubic contents. This was out of the question, the freight amounting to above £13 per ton: a sample could therefore only be sent; the rest had to be thrown away. This experiment cost Government over Rs. 1,600.

I also passed some wild plantain through the rollers, obtaining an apparently useful fibre, two packages of which I have sent to Messrs. Routledge and Co. for report.

BERTHOLD RIBBENTROP,
Additional Conservator of Forests, British Burma.

Form No. 45.

FOREST DEPARTMENT—BRITISH BURMA.

Area of Reserved Forests for the year 1876-77.

Division or Range.	Name of Forest.	Area on 31st April 1876.		Added during the year.		Excluded or transferred to other heads.		Total on 31st March 1877.		No. and date of Notification of additions.	Remarks.
		Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.		
Salween Division.	Banzway	14	8,960	...	...	...	...	14	8,960		
	Wah Moo choung	2 75	1,760	...	...	...	...	2 75	1,760		
	Total Tenasserim ...	16·75	10,720	...	...	...	...	16 75	10,720		
Prome Division.	Oopaulangyee	3 563	1 362	...	...	...	...	...	1 362		
	Oopaulangalay		515	...	...	...	...	3·563	515		
	Yeatha		403	...	...	...	...	...	403		
	Upper Khyoungzouk	25·2	3,456	...	...	...	...	...	3,456		
	Nyoungbenzway		3,072	...	...	...	...	25 2	3,072		
	Middle Khyoungzouk		2,880	...	...	...	...		2 880		
	Gwaycho		6,720	...	...	...	...	..	6,720		
	Shwe Kyoondaw	·372	238	...	...	...	...	·372	238		
	Thayetmyo District. East Yoma Block embracing teak localities in the Boolay Stream.	125·	80,000	...		...	...	125·	80 000	*	
	Prome Civil District East of Irrawaddie.				...						
	Mahattaman	70·31	4 857	...	...	...	...	...	4,857	‡	
	Middle Nawing		24,128	...	...	...	...	70·31	24,128		
	North Nawing		16,013	...	...	...	...	...	16,013		
	Yoma Block Reserve	119·	76,160	...	...	...	...	119·	76,160	*	
	Thayetmyo Civil District, Cutch Reserves Thaybyeelah on the lower hills South of the Pudday Stream	12 5	8,000	...	...	...	...	12·5	8,000	‡	
	East Irrawaddie.										
	Upper Tsatsoowah	15·	4 800	...	...	...	...	...	4,800		
	Bangong		1,920	...	..	...	...	15·	1,920	‡	
	Taindau		2,880	...	...	...	...	...	2,880		
	Carried over ...	370 945	2,37,404	...	...	...	...	370 945	2,37,404		

* These Yoma blocks were sanctioned as ordinary reserves and on the 1st of April 1877 Toungya was not excluded. See para. 43 of report.

† These reserves have not as yet been demarcated toward. the Yomah. Para. 43 of report.

‡ These reserves include cultivation. See para. 49 of report.

Form No. 45.—*(Continued.)*

Division or Range.	Name of Forest.	Area on 31st April 1876.		Added during the year.		Excluded or transferred to other heads.		Total on 31st March 1877		No. and date of Notification of additions.	Remarks.
		Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.		
	Brought forward ...	370·945	2,37,404	...	...	...	...	370·945	2,37,404		
Prome Division.	Fuel Reserves.										
	Htoonyea	...	...	19 1	12,224	...	...	19 1	12,224	...	P. W D. Notification No. 172, dated 21st September 1876.
	Pouktaw	...	...	7 3	4,672	...	...	7 3	4,672	...	P. W. D Notification No 217, dated 18th November 1876.
		370·945	2,37,404	26 4	16,896	...	...	397 345	2,54,300		
Tharrawadie Division. — Northern Sub-Division. — Shoaylay Range.	Daulay	2 75	1,760	...	...	...	...	2 75	1,760		
	Padetmyoung	7·0	4,480	...	..	...	...	7·0	4,480		
	Kyoukyeedong	4·	2,560	...	...	...	...	4·	2 560		
	Bwet	4·510	2,886	...	...	...	...	4 510	2,886		
	Gnaydoukgueng	16·0	10,240	...	...	...	...	16·0	10,240		
	Kyeebyoo	3 42	2,188	...	...	...	...	3 42	2,188		
	Yoma Block	52 5	33,600	...	...	...	...	52 5	33,600		
Toungnyo Range.	Kadinzouk and Kadinthongnin ...	5·5	3,520	...	...	...	...	5 5	3,520		
	Shaboung or Kokee	3·483	2,229	...	...	...	...	3 483	2,229		
	Upper Padingben	·875	560	...	...	..	...	·875	560		
	Lower do.	·376	240	...	...	...	...	·376	240		
	Upper Thapan	1·586	1,015	...	...	...	...	1 586	1,015		
	Lower do.	1·054	674	...	...	...	...	1·054	674		
	Nyanlay	9 125	5,840	...	...	...	...	9 125	5 840		
	Paninjay	2·0	1,280	...	...	...	...	2·0	1,280		
Mimboo Range.	Kannee	1 2	768	...	...	...	...	1·2	768		
	Toungnyo Hill	5 5	3,520	...	...	...	...	5·5	3,520		
	Upper Pyahgyee	1 626	1,041	...	...	...	...	1·626	1,041		
	Lower do.	·893	571	...	...	...	...	·893	571		
	Thitcho	2 209	1,414	...	...	...	...	2 209	1 414		
	Kangyee	5 939	3,801	...	...	...	...	5·939	3,801		

THERRAWADIE DIVISION, SOUTHERN SUB-DIVISION.	Boben Range.	Gwaydouksan	2·040	1,306	...	...	...	...	2·040	1,306	
		Choungwah	1·162	744	...	...	...	...	1·162	744	
		Choungzouk	5·8406	3,738	...	...	...	...	5·8406	3,738	
	Mokka Beeling Range.	Mokkah	22·0	14,080	...	...	...	...	22·0	14,080	
		Beeling									
	Toung Range.	Myodwin	·0625	40	...	...	...	...	·0625	40	
		Fuel Reserves.									
		Satpoke	7·27	4,653	...	...	...	...	7·27	4,653	
		Sitquin	4·279	2,738	...	...	...	...	4·279	2,738	
		Choungnagoon	·53	339	...	...	...	...	·53	339	
		Thendawyo	10·003	6,402	...	...	...	...	10·003	6,402	
			184·7331	1,18,227	...	...	...	...	184·7331	1,18,227	
Rangoon Division.		Kyetpoogan	2·74	1,753	...	...	...	...	2·74	1,753	
		Fuel Reserves.									
		Hmawbee choung	2·647	1,694	...	...	...	...	2·647	1,694	
		Kyoon choung	13·51	8,647	...	...	...	...	13·51	8,647	
		Thitpyat „	4.79	3,066	...	...	...	...	4·79	3,066	
		Thaboo „	12·557	8,036	...	...	...	...	12·557	8,036	
			36·244	23,196	...	...	...	...	36·244	23,196	
Sittang Sub-Division.		Pyoon choung	5·37	3,436	...	...	...	...	5·37	3,436	
		Kannee	·109	70	...	...	...	...	·109	70	
			5·479	3,506	...	...	...	...	5·479	3,506	
		Total Pegu ...	597·4011	3,82,333	26·4	16·896	...	...	623·8011	3,99,229	
		Total British Burma ...	614·1511	3,93,053	26·4	16·896	...	...	640·5511	4,09,949	

Form No. 45.

FOREST DEPARTMENT—BRITISH BURMA.

Area of Un-reserved Forests for the year 1876-77.

Division Range.	Name of Forest.	Area on 1st April 1876.		Added during the year.		Excluded or transferred to other heads.		Total on 31st March 1877.		No. and date of Notification of additions.	Remarks.
		Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.		

15 species of trees are reserved throughout the greater part of the Province, but the actual extent of the forests over which they are distributed is unknown.

Form No. 46.

FOREST DEPARTMENT—BRITISH BURMA.

Area of Plantations 1876-77.

Division.	Name of Plantation.	On 1st April 1876.				During 1876-77.				On 31st March 1877.				Remarks.
		Area.	Total cost.			Area added.	Cost.			Total area.	Total cost.			
			Rs.	A.	P.		Rs.	A.	P.		Rs.	A.	P.	
Salween	Thingancenoung ...	10	14,965	10	8	...	...	...	...	10	14,965	10	8	
	Shwaygoon ...	5	3,786	12	4	...	...	...	...	5	3,786	12	4	
	Koloon Island ...	2	3,538	15	8	...	...	...	...	2	3,538	15	8	
Total Tenasserim ...	.....	17	22,291	6	8	...	...	...	...	17	22,291	6	8	
Prome	Prome Plantation ...	73	8,598	10	7	...	*197	4	9	73	8,795	15	4	* Thinning operations. These Thinnings were sold for Rupees 96, but there is no column in this form to credit plantations which such income.
Rangoon	Kyetpyoogan ...	683	73,251	8	8	...	1,560	3	0	683	74,811	11	8	
	Magayee	711	53,596	3	6	322	21,978	9	5	1,033	75,574	12	11	
Tharrawaddie	Choungwah	340	34,727	4	7	...	...	...	...	340	34,727	4	7	
	Quaymakeing ...	144	15,731	0	11	...	60	...	...	144	15,791	0	11	
	Myodwin	10	430	10	9	...	...	...	...	10	430	10	9	
Sittang	Kannee	70	1,373	2	4	...	...	...	...	70	1,373	2	4	
	Pyoon Choung ...	695	24,142	15	0	1	116	10	0	696	24,259	9	0	
Total Pegu...	.....	2,726	2,11,851	8	4	323	23,912	11	2	3,049	2,35,764	3	6	
Total British Burma...	.....	2,743	2,34,142	15	0	323	23,912	11	2	3,066	2,58,055	10	2	

Form No. 47.

FOREST DEPARTMENT—BRITISH BURMA.

Area of forest tracts protected from fire during the dry season of 1877, (*to accompany report for* 1876-77.)

Division.	Forest tracts.	Up to 31st July 1876.				During dry season 1877.				Total cost up to 30th June 1877.	Year when protection commenced.	Remarks.
		Area actually protected.	Cost up to 31st March 1876.	Cost up to 31st July 1876.	Total cost.	Area attempted to be protected.	Failures.	Actually protected.	Amount expended.			
		Acres.			Rs. A. P.	Acres.	Acres.	Acres.	Rs. A. P.	Rs. A. P.		
Salween	Yoonzaleen Sinzway ...	8,960	100 12 0	...	100 12 0	8,960	8,960	...	...	100 12 0	1871	
	Wahmoo choung	1,760	20 0 0		20 0 0	1,760	...	1,760	...	20 0 0	,,	
	Doomdamee Tagaloung ...	...	...	...	...	5,120	...	5,120	298 15 0	298 15 0	May 1877	
	Beelokatgyee ...	...	...	...	...	5,120	...	5,120				
	Oankagyee ...	...	...	...	...	7,040	...	7,040				
	Beeling Maywine ...	...	...	...	...	8,320	...	8,320	...	...	,,	Remuneration for fire tracing the Beeling Maywine Reserves will be made in 1877-78.
	Total Tenasserim	10,720	120 12 0	...	120 12 0	36,320	8,960	27,360	298 15 0	419 11 0		
						Charged in previous years			...	100 12 0		
						Do. Do. 1874-75			...	.....		
						Do. Do. 1875-76			...	20 0 0		
						Do. Do. 1876-77			...	298 15 0		
									Total ...	419 11 0		
Tharrawaddie	Mokka Beeling Reserve ...	14,080	6,264 1 10	509 10 0	6,773 11 10	14,080	...	14,080	1,330 15 10	8,104 11 8	1873	Includes the Quaymakeing plantation of 144 acres which has been protected since 1869, of the 1330-15-10—393-8-6 still due will be paid in June if possible, if not in July 1877.
	Boben ...	670	1,534 13 11	326 3 8	1,861 1 7	670	56	614	446 13 6	2,307 15 1	...	The area of this reserve is 744 acres. Only about 670 of it is protected. Includes the plantation of 340 acres which has been protected since 1869. The 56 acres failure is not attributable to any fault in fire tracing. the area was burnt by villagers firing their teak Toungyas.

THARRA-WADDIE	Myodwin ...	40	263 0 0	30 5 0	293 5 0	40	...	40	62 11 6	356 0 6	1876	The plantation of 10 acres has been protected since 1868.
	Bwet ...	...	...	...	...	2,886*	86†	2,800	1,144 10 6	1,144 10 6	1877	* This is the area of the reserve which has been somewhat reduced by taking the fire paths as straight as possible. † This area is only estimated.
	Kangyee ...	3,801	339 6 6	...	339 6 6	3,801	1,267	2,534	2,580 1 6	2,919 8 0	"	Areas only estimated.
	Nyanlay ...	...	...	...	...	5,840	5,840	...	5,431 9 9	5,431 9 9	"	There is still a sum of Rs. 162-4-6 to be paid on this account.
RANGOON	Magayee ...	1,121	4,431 8 4	...	4,431 8 4	1,443	410	1,033	4,424 6 0	8,855 14 4	"	
	Kyetpyoogan ...	683				683	683					
PROME ...	Teak plantation	66	4,297 6 8	...	4,297 6 8	77	2	75	17 8 0	4,314 14 8	"	
	Gwaychoo ...	6,720				6,720	...	6,720				
	Choungzouk ...	6,336				6,336	...	6,336				About 3 acres of jungle included in the reserve were burnt. Cost of fire tracing does not include the pay of the guard in charge on Rs. 120 per annum.
SITTANG	Pyoon Choung	3440·7	...	...	1,497 10 0	3440·7	...	3440·7	576 4 0	2,073 14 0	"	
	Yaynay ...	...	...	...	...	5,760	...	5,760	359 10 0	359 10 0	"	
	Total Pegu ...	36,957·7	17,130 5 3	866 2 8	19,494 1 11	51,776·7	8,344	43,432·7	16,374 10 7	35,868 12 6		
						Charged in previous years			...	11,029 3 9		
						Do. Do. 1874-75			...	4,267 4 9		
						Do. Do. 1875-76			...	4,197 9 5		
						In 1876-77			...	16,374 10 7		
									Total ...	35,868 12 6		
Total British Burma ...		47,677·7	17,251 1 3	866 2 8	19,614 13 11	88,096·7	17,304	70,792·7	16,673 9 7	36,288 7 6	...	
						Of previous years up to present year			...	19,614 13 11		

Form No. 48.

FOREST DEPARTMENT—BRITISH BURMA.

Prosecutions for breaches of Forest Rules during 1876-77.

Forest Division and Civil District	Injury to Forest by fire.		Unauthorized felling or appropriation of wood and minor forest produce.		Grazing without permission or in tracts in which grazing is prohibited.		Other offences.		Total.				Remarks
									Prosecutions.		Convictions.		
	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Salween ...	...	...	24	25	..	...	...	...	24	25	18	20	
Total Tenasserim ..	...	...	24	25	...	...	...	...	24	25	18	20	
Tharrawaddie ...	...	...	1	2	...	...	...	...	1	2	1	2	May 1876, one man fined 30/ in default one months imprisonment.
	...	...	1	1	...	...	...	...	1	1	1	1	Do. 60 do two do. June 1876, 4 months simple imprisonment and 150 fine or 6 weeks further imprisonment, fine paid.
	...	...	2	4	...	...	1	3	3	7	2	3	Nov. 1876, 3 Defts. being mere boys were discharged with warning, 1 man fined 3 or 7 days imprisonment, 1 man in case under "other offences" dismissed, and 2 men
	...	...	1	1	...	...	...	...	1	1	1	1	October 1876, fine 30/ in default 1 month rigorous imprisonment. [fined 10 each.
	...	...	7	7	...	...	...	...	7	7	7	6	December 1876, five men fined 10/ each, 1 man 5 and 1 dismissed.
	...	...	2	2	.	...	...	...	2	2	2	2	March 1877, one man fined 5 and 1 Rs. 2.
	...	...	14	17	...	...	1	3	15	20	14	15	
Rangoon ...	...	...	1	10	...	...	...	...	1	10	1	10	
	...	...	1	10	...	...		...	1	10	1	10	
Prome	...	...	4	7	...	...	2	2	6	9	5	8	
	...	...	1	9	...	...	...	...	1	9	1	9	
	...	...	5	16	...	...	2	2	7	18	6	17	
Total Pegu ...	..	...	20	43	...	...	3	5	23	48	21	42	
Total British Burma..	..	...	44	68	...	...	3	5	47	73	39	62	

Form No. 49.

FOREST DEPARTMENT—BRITISH BURMA.

Annual Summary of Revenue of the different divisions during 1876-77.

	Direction.	Demarcation Division.	Tharrawaddie.	Rangoon.	Prome.	Sittang.	Western.	Agency.	Total Pegu Forest Circle.	Direction.	Salween.	Kadoc.	Mergui.	Total Tenasserim Forest Circle.	Grand Total.
I.—Revenue from wood.															
1.—Brought to Depôt by departmental agency,															
(*a.*)—Timber	...	...	* 52,604 2 0	*16 0 0	* 14,637 4 0	* 8,037 14 0	...	8,19,330 3 2	8,94,625 7 2	...	2,84,508 9 2	200 0 0	...	2,84,708 9 2	11,79,334 0 4
(*b.*)—Fire-wood and charcoal	...	...	...	...	...	...	...	...	...	...	1,085 11 0	...	...	1,085 11 0	1,085 11 0
(*c.*)—Sandal-wood.															
2.—Wood removed from the forests by purchasers, licensed-holders and permit-holders.															
(*a.*)—Timber	...	...	11,341 14 6	4,847 10 6	6,619 11 6	1,379 8 6	3,653 5 0	† 28,846 10 9	56,688 12 9	...	14,340 10 3	3,744 14 0	67 8 0	18,153 0 3	74,841 13 0
(*b.*)—Fire-wood and charcoal	...	...	...	65 0 0	...	...	104 0 0	...	169 0 0	...	465 8 0	...	...	465 8 0	634 8 0
3.—From confiscated, drift, and waif-wood ...	...	...	819 12 6	...	...	2,193 10 0	137 0 0	4,927 12 0	§ 8,078 2 6	...	...	20,454 15 0	290 14 3	20,745 13 3	28,823 15 9
II.—Revenue from minor produce.															
1.—Grazing dues and sale of grass	...	...	5 0 0	177 8 0	...	...	...	...	182 8 0	...	...	...	...	...	182 8 0
2.—Other minor produce	...	...	3 13 3	518 12 0	‡ 17,107 0 0	20 0 0	311 0 0	61 4 9	18,021 14 0	...	...	...	...	...	18,021 14 0
III.—Duty on produce of foreign or private forests imported into British territory.															
1.—On wood...	...	...	...	...	...	...	...	...	...	...	...	2,16,244 1 6	...	2,16,244 1 6	2,16,244 1 6
2.—On other forest produce.															
IV.—Miscellaneous.															
1.—From fines and forfeitures	...	...	189 3 9	343 15 0	135 0 0	953 4 0	26 0 0	127 8 0	1,774 14 9	...	531 0 0	...	...	531 0 0	2,305 14 9
2.—From refunds to the Department ...	...	...	40 0 0	...	8 0 0	52 14 0	...	61 12 8	162 10 8	...	18 0 0	...	...	18 0 0	180 10 8
3.—From other sources	...	...	15,167 0 9	170 2 8	741 8 0	5,837 4 0	12 0 0	2,874 4 11	24,802 4 4	...	604 3 0	4,402 10 0	4 0 0	5,010 13 0	29,813 1 4
Total Rupees ...	...	...	80,170 14 9	6,139 0 2	39,248 7 6	18,474 6 6	4,243 5 0	8,56,229 8 3	10,04,505 10 2	...	3,01,553 9 5	2,45,046 8 6	362 6 3	5,46,962 8 2	15,51,468 2 4

* Sales at local depots.
† Chiefly Revenue on Koon and Swah timber.
‡ This includes revenue on Cutch boilers.

§ This sum does not include salvage recovered from claimants which is credited under IV. 3.

Form No. 49.—*(Continued.)*

Classification.	Direction.	Demarcation Division.	Rangoon Depôt and Agency.	Prome Division.	Tharrawaddie Division.	Rangoon Division.	Sittang Division.	Western Division.	Total Pegu Forest Circle	Direction.	Salween.	Kadoc.	Mergui.	Total Tenasserim Forest Circle.	Total British Burma.
EXPENDITURE.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
A.—Conservancy and Works.															
I.—Cost of timber operations.															
1.—On wood brought to Depôt by Departmental Agency.															
(a) Timber	...	120 15 6	67,464 13 0	14,923 2 1	86,761 4 3	50,178 3 5	66,149 5 3	2,013 2 0	2,87,610 13 6	...	3,68,350 0 0	1,581 12 0	3,795 5 10	3,73,727 1 10	6,61,337 15 4
(b.) Fire-wood and charcoal ...	...	...	...	...	...	24 8 0	...	...	24 8 0	...	...	...	...	...	24 8 0
(c.) Sandal-wood	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2.—On wood removed from the forests by purchasers, license-holders and permit-holders.															
(a.) Timber	...	...	400 8 0	...	...	745 1 10	...	...	1,145 9 10	...	...	8 0 0	...	8 0 0	1,153 9 10
(b.) Fire-wood and charcoal ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3.—On confiscated drift and waif-wood ...	...	...	3,967 6 6	764 2 10	8 4 0	2,993 4 5	4,454 15 0	117 10 0	12,305 10 9	...	2,661 0 0	18,830 2 0	518 15 6	22,010 1 6	34,315 12 3
II.—Cost of collecting minor-produce.															
1.—Grazing and sale of grass	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2.—Other forest-produce	...	...	15 0 0	...	...	...	...	...	15 0 0	...	27 0 0	...	...	27 0 0	42 0 0
III.—Cost of forest organization.															
1.—Demarcation lines and boundary pillars or marks	...	703 6 3	...	879 11 9	1,655 12 9	444 10 0	242 0 0	...	3,925 8 9	...	690 5 0	...	...	699 5 0	4,624 13 9
2.—Working plans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3.—Surveys	...	373 11 8	...	419 14 0	434 7 10	774 12 2	222 8 0	...	2,225 5 8	...	914 12 0	...	...	914 12 0	3,140 1 8
IV.—Cost of the treatment and creation of forests.															
1.—Natural forests.															
(a.) Protection from fire	...	...	421 1 3	...	10,361 0 5	...	464 2 0	...	11,246 3 8	...	80 0 0	...	...	80 0 0	11,326 3 8
(b.) Fencing and enclosing... ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(c.) Improvement and Conservation ...	...	...	357 12 9	390 8 0	5,618 4 0	...	112 12 0	...	*6,479 4 9	...	260 8 8	...	...	260 8 8	6,739 13 5
(d.) "Reboisement" or restoration of denuded areas	...	...	...	...	...	...	...	...	...	...	11 0 0	...	...	11 0 0	11 0 0
2.—Artificial forests.															
(a.) Formation	...	...	3,359 2 11	131 2 0	224 4 0	20,327 11 11	270 8 0	...	24,312 12 10	...	859 8 0	...	...	859 8 0	25,172 4 10
(b.) Protection from fire	...	...	...	...	...	3,091 1 2	432 12 0	...	3,523 13 2	...	...	...	...	...	3,523 13 2
(c.) Improvement and Conservation ...	...	...	2,257 8 6	202 4 9	253 12 3	119 15 4	222 8 0	34 6 6	3,090 7 4	...	58 0 0	...	...	58 0 0	3,148 7 4
(d.) Fencing and enclosing ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

V.—Rent of leased forests	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
IV.—Cost of collecting duty on produce of foreign or private forests, imported into British Territory	...	...	...	...	...	...	...	...	...	...	600 0 0	...	...	600 0 0	600 0 0
VII.—Works of utility for the development of forests.															
1.—Roads and bridges	...	...	1,666 10 3	...	...	339 10 7	...	280 0 0	2,286 4 10	...	...	24 0 0	8 8 0	32 8 0	2,318 12 10
2.—Buildings and offices	...	...	1,602 7 0	3,374 15	665 10 6	1,620 2 8	248 8 0	...	7,511 11 2	...	220 2 0	...	146 3 3	366 5 3	7,878 0 5
3.—Compensation for land taken up for forest purposes, or for extinction of forest rights	...	225 0 0	...	512 0	210 0 0	...	...	...	947 0 0	...	...	...	...	...	947 0 0
4.—Other Works	...	...	243 7 10	233 10	1,794 9 2	...	...	301 1 0	2,572 12 8	...	...	...	...	...	2,572 12 8
VIII.—Cost of Departmental Cattle.															
1.—Purchase of stock	...	...	17,570 0 0	...	6,425 0 0	...	...	...	23,995 0 0	...	...	...	...	...	23,995 0 0
2.—Hire of stock	...	...	...	...	...	...	35 14 0	...	35 14 0	...	...	...	...	...	35 14 0
3.—Feed and keep of cattle	...	665 5 0	7,384 13 2	1,490 14	3,217 5 6	1,587 3 0	1,282 14 6	69 11 0	15,698 2 5	...	1,140 11 0	...	720 5 8	1,861 0 8	17,559 3 1
IX.—Cost of Departmental plant and tools.															
1.—For timber and wood operations ...	...	...	957 7 6	190 11	48 0 0	186 9 0	16 0 0	...	1,393 11 6	...	530 8 0	716 2 0	82 5 0	1,328 15 0	2,722 10 6
2.—For other purposes	...	74 8 0	2,329 15 9	293 2	51 7 3	613 3 0	212 2 0	100 0 0	3,674 6 9	...	314 7 0	401 12 0	76 2 0	792 5 0	4,466 11 9
X.—Miscellaneous charges.															
1.—Refunds	...	...	4 0 0	...	...	...	...	...	4 0 0	...	...	...	...	...	4 0 0
2.—Law charges	...	0 8 0	...	3 0	...	...	223 2 0	...	226 10 0	...	4 0 0	...	...	4 0 0	230 10 0
3.—Other charges	...	...	2,265 4 4	45 4	394 15 9	492 0 6	201 8 0	3 12 0	3,402 12 7	...	99 5 0	68 11 0	602 8 0	770 8 0	4,173 4 7
Total of A.—Conservancy and Works... ...	...	2,163 6 5	1,12,267 6 9	23,854 7	1,18,119 1 8	83,538 1 0	74,791 6 9	2,919 10 6	4,17,653 8 2	...	3,76,830 2 8	21,630 7 0	5,950 5 3	4,04,410 14 11	8,22,064 7 1
B.—ESTABLISHMENTS.															
I.—Salaries.															
1.—Pay of Conservator	12,000 0 0	...	...	...	...	...	...	...	12,000 0 0	7,264 8 1	...	...	...	7,264 8 1	19,264 8 1
2.—Pay of Control and Executive Officers ...	...	961 4 7	2,761 12 4	5,958 5	10,480 10 3	11,851 9 10	10,150 0 0	1,027 9 4	43,191 3 6	...	14,346 5 10	...	2,800 0 0	17,146 5 10	60,337 9 4
3.—Protective Establishments	3,840 5 9	...	...	3,826 4	7,023 12 0	3,844 11 0	5,800 7 0	1,150 10 6	25,486 2 6	...	4,520 5 0	2,805 0 0	...	7,325 5 0	32,811 7 6
4.—Office Establishments	17,130 0 5	...	...	1,845 12	3,093 12 6	2,584 4 7	1,501 8 0	218 14 1	26,374 3 9	900 0 0	1,366 5 0	3,418 8 0	...	5,684 13 0	32,059 0 9
5.—Deputation and special allowances ...	...	...	3,500 0 0	...	...	...	...	...	3,500 0 0	...	...	...	...	...	3,500 0 0
II.—Travelling allowances.															
1.—Conservator	2,307 8 0	...	...	...	...	...	...	...	2,307 8 0	980 8 0	...	...	...	980 8 0	3,288 0 0
2.—Control and Executive Officers ...	...	...	1,131 8 0	1,842 0	4,924 0 0	7,045 8 0	2,771 0 0	1,256 9 11	18,970 9 11	...	1,914 2 0	...	...	1,914 2 0	20,884 11 11
3.—Protective Establishments	...	...	48 0 0	52 0	2 14 0	...	...	...	102 14 0	...	734 0 0	...	...	734 0 0	836 14 0
4.—Office Establishments	128 1 0	...	...	13 13	113 1 0	31 4 0	...	...	286 3 8	...	10 0 0	...	...	10 0 0	296 3 8
III.—Contingencies.															
1.—Stationery	...	3 12 0	348 13 0	1 0	9 8 0	176 5 0	9 4 0	19 0 0	567 10 0	...	25 12 0	21 0 0	...	46 12 0	614 6 0
2.—Office rent and carriage of tents, and office records	12 6 0	...	...	9 0	24 4 0	257 12 0	...	30 0 0	333 6 0	...	21 12 3	...	42 0 0	63 12 3	397 2 3
3.—Pay of Police Guards	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4.—Sundries	2,617 0 11	58 3 0	...	459 8	694 1 10	579 11 0	369 5 9	42 12 0	4,820 10 9	1,050 5 0	2,100 0 5	24 8 0	21 4 0	3,196 1 5	8,016 12 2
5.—Official postage	188 15 6	11 15 0	...	33 7	32 10 6	36 8 0	56 14 0	29 10 0	390 0 6	...	262 4 6	20 0 0	0 8 0	282 12 6	672 13 0
Total of B.—Establishments... ...	38,224 5 7	1,035 2 7	7,790 1 4	14,041 3	26,398 10 1	26,407 9 5	20,658 6 9	3,775 1 10	1,38,330 8 7	10,195 5 1	25,300 15 0	6,289 0 0	2,863 12 0	44,649 0 1	1,82,979 8 8
GRAND TOTAL OF ALL EXPENDITURE ...	38,224 5 7	3,198 9 0	1,20,057 8 1	37,895 10	1,44,517 11 9	1,09,945 10 5	95,449 13 6	6,694 12 4	5,55,984 0 9	10,195 5 1	*4,02,131 1 8	27,919 7 0	8,814 1 3	4,49,059 15 0	10,05,043 15 9

* See Para 11 of Report

† This includes Rs. 544, drawn in arrears for 1875-76

Form No. 50.

FOREST DEPARTMENT—BRITISH BURMA.

Annual Account Current for the year 1876-77.

	Pegu.	Tenasserim.	British Burma.		Pegu.	Tenasserim.	British Burma.
	Rs. A. P.	Rs. A. P.	Rs. A. P.		Rs. A. P	Rs. A. P.	Rs. A. P.
Cash balance on 1st April 1876... ...	15,074 4 1	4,079 13 7	19,154 1 8	By Expenditure A.	4,17,653 8 2	4,04,410 14 11	8,22,064 7 1
Revenue receipts	10,04,505 10 2	5,46,962 8 2	15,51,468 2 4	„ Do B.	1,38,330 8 7	44,649 0 1	1,82,979 8 8
Deposits	24,298 2 4	2,505 5 9	26,803 8 1	„ Deposits	21,330 5 1	1,728 0 0	23,058 5 1
Advances recoverable	1,02,808 2 5	6,230 4 1	1,09,038 6 6	„ Advances Recoverable	1,02,270 1 10	8,142 15 4	1,10,413 1 2
Remittances, Home Government ...	416 10 8	...	416 10 8	„ Remittances (State) Treasury	8,84,411 10 5	5,03,982 12 6	13,88,394 6 11
Loss by Exchange	6 6 3	...	6 6 3	„ Profit and Loss	93 5 0	...	93 5 0
Remittances (State) Treasury	5,23,219 8 8	4,60,184 11 8	9,83,404 4 4	„ Remittances P. W. Department... ...	77,193 12 0	15,625 5 7	92,819 1 7
„ P. W. Department... ...	2,472 0 0	...	2,472 0 0	„ Do. Madras Government ...	...	18,589 9 4	18,589 9 4
Madras Military Fund	...	197 5 3	197 5 3	„ Do. Government India... ...	...	9,575 14 6	9,575 14 6
Bengal „	...	167 14 11	167 14 11	„ Do. Jail Department	23,759 0 0	...	23,759 0 0
U. S. Army Pension Fund	1,702 4 6	395 0 0	2,097 4 6	„ Do. London...	61 12 8	...	61 12 8
				„ Loss by Exchange	6 6 3	...	6 6 3
				„ Cinchona charges	5,440 9 0	...	5,440 9 0
				„ Office rent	502 0 0	265 0 6	767 0 6
				„ Balance on 31st March 1877	12,406 7 10	4,797 0 11	17,203 8 9
Total ...	16,74,503 1 1	10,20,722 15 5	26,95,226 0 6	Total ...	16,83,459 6 10	10,11,766 9 8	26,95,226 0 6

* *N. B.*—There is a difference in the totals of circles of Rs. 8,956-5-9 caused by transfers in account. The Grand totals for British Burma however will be found to correspond.

Form No. 51.

FOREST DEPARTMENT—BRITISH BURMA.

Annual Statement of Outstandings and Liabilities on account of Contractors and Disbursers for 1876-77.

Division.	Department Debtor.			Department Creditor.			Balance due.		Remarks.
	At commencement of year.	Recoveries in cash and value of supplies & work done during year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To Department (outstandings).	By Department (liabilities).	
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	
Salween	...	2,17,335 4 0	2,17,335 4 0	40,000 0 0	2,65,198 7 0	3,05,198 7 0	87,863 3 0	...	
Total Tenasserim ...	...	2,17,335 4 0	2,17,335 4 0	40,000 0 0	2,65,198 7 0	3,05,198 7 0	87,863 3 0	...	In favor of year
Prome	...	16,105 8 0	16,105 8 0	...	30,552 4 0	30,552 4 0	14,446 12 0	...	Ditto ditto.
Tharrawaddie ...	10,959 13 11	1,29,239 7 6	1,40,199 5 5	11,196 11 9	1,55,776 2 2	1,66 972 13 11	35,508 5 4	8,734 12 10	
Rangoon	...	46,348 1 8	46:348 1 8	1,052 5 2	53,145 5 1	54,197 10 3	7,849 8 7	...	
Sittang	729 4 0	61,996 11 0	62,725 15 0	14,985 4 0	66,082 9 0	81,067 13 0	19,320 0 0	978 2 0	
Total Pegu ...	11,689 1 11	2,53,689 12 2	2,65,378 14 1	27,234 4 11	3,05,556 4 3	3,32,790 9 2	77,124 9 11	9,712 14 10	
Total British Burma ..	11,689 1 11	4,71,025 0 2	4,82,714 2 1	67,234 4 11	5,70,754 11 3	6,37,989 0 2	1,64,987 12 11	9,712 14 10	The total amount for British Burma in favor of the year is Rs 99,729- 1 1

Form No. 52.

FOREST DEPARTMENT—BRITISH BURMA.

Annual Statement of outstandings on account of Revenue during 1876-77.

Division.	Particulars.	Outstanding at commencement of year.	Value of sales and other Revenue during the year.	Total.	Amount realised during year.	Balance due to the Department at end of year.	Remarks.
		RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.		
KADOE REVENUE STATION.	Sale of Timber	...	20,654 15 0	20,654 15 0	20,654 15 0	...	
	Wood removed from Forests by Purchasers ...	...	3,744 14 0	3,744 14 0	3,744 14 0	...	
	Duty on produce of Foreign or private forests imported into British Territory	...	2,16,244 1 6	2,16,244 1 6	2,16,244 1 6	...	
	Revenue from Miscellaneous	...	4,402 10 0	4,402 10 0	4,402 10 0	...	
		...	2,45,046 8 6	2,45,046 8 6	2,45,046 8 6	...	
SOUTH TENASSERIM.	Sale of Waif Timber	...	290 14 3	290 14 3	290 14 3	...	
	Wood removed from Forests by Purchasers ...	...	67 8 0	67 8 0	67 8 0	...	
	Revenue from Miscellaneous	...	4 0 0	4 0 0	4 0 0	...	
		...	362 6 3	362 6 3	362 6 3	...	
SALWEEN.	Padouk sold to Madras Government	18,589 9 4	...	18,589 9 4	18,589 9 4	...	
	Sale of Teak logs	...	2,44,487 6 3	2,44,487 6 3	2,44,487 6 3	...	
	Do. do. Sleepers	...	2,505 0 0	2,505 0 0	2,505 0 0	...	
	Do. do. Shingles	...	5,983 6 4	5,983 6 4	5,983 6 4	...	
	Do. do. Woods of other kinds	...	5,806 7 0	5,806 7 0	5,806 7 0	...	
	Do. do. do. Sleepers	...	7,136 12 3	7,136 12 3	7,136 12 3	...	
	Do. do. Firewood and Charcoal ...	...	1,085 11 0	1,085 11 0	1,085 11 0	...	
	Wood removed from Forest by Purchasers ...	...	14,340 10 3	14,340 10 3	14,340 10 3	...	
	Do. Firewood and Charcoal ...	...	465 8 0	465 8 0	465 8 0	...	
	Revenue from Fines	...	531 0 0	531 0 0	531 0 0	...	
	Do. do. Refunds	...	18 0 0	18 0 0	18 0 0	...	
	Do. do. Miscellaneous	...	604 3 0	604 3 0	604 3 0	...	
		18,589 9 4	2,82,964 0 1	3,01,553 9 5	3,01,553 9. 5	...	
	TOTAL TENASSERIM FOREST CIRCLE...	18,589 9 4	5,28,372 14 10	5,46,962 8 2	5,46,962 8 2	...	

Form No. 52.—*(Continued.)*

Division.	Particulars.	Outstanding at commencement of year.	Value of Sales and other revenue during year.	Total.	Amount realized during year.	Balance due to the Departmental end of year.	Remarks.
		Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
THARRAWADDIE.	Sale of Teak logs	...	39,861 6 0	39,861 6 0	39,861 6 0	...	The sum of Rs. 5,077, exhibited last year as outstanding on account of Sleeper pieces, is here omitted, as the ruling of the Local Government on this supply, absolved the Railway from payment of Rs. 5 per ton additional, for supervision, and this sum was therefore not credited by the Railway.
	Do. refuse timber	...	19,975 14 3	19,975 14 3	19,975 14 3	...	
	Do. Pynkadoe	...	3,936 5 0	3,936 5 0	3,936 5 0	...	
	Do. Teak Slabs	...	37 8 0	37 8 0	37 8 0	...	
	Revenue on Reserved woods	...	954 11 9	954 11 9	954 11 9	...	
	Do. Minor Forest Produce	...	8 13 3	8 13 3	8 13 3	...	
	Do. From fines	...	189 3 9	189 3 9	189 3 9	...	
	Do. Refunds	...	40 0 0	40 0 0	40 0 0	...	
	Do. Miscellaneous	...	15,167 0 9	15,167 0 9	15,167 0 9	...	
		...	80,170 14 9	80,170 14 9	80,170 14 9	...	
RANGOON.	Sale of Timber	...	16 0 0	16 0 0	16 0 0	...	
	Wood removed by purchasers &c. (*a* & *b*)	...	4,912 10 6	4,912 10 6	4,912 10 6	...	
	Minor forest produce	...	696 4 0	696 4 0	696 4 0	...	
	Revenue from fines	...	343 15 0	343 15 0	343 15 0	...	
	Do. Miscellaneous...	...	170 2 8	170 2 8	170 2 8	...	
		...	6,139 0 2	6,139 0 2	6,139 0 2	...	
PROME.	Sale of Timber	...	14,637 4 0	14,637 4 0	14,637 4 0	...	
	Wood removed by purchasers &c.	...	6,619 11 6	6,619 11 6	6,619 11 6	...	
	Minor forest produce	...	17,107 0 0	17,107 0 0	17,107 0 0	...	
	Revenue from fines	...	135 0 0	135 0 0	135 0 0	...	
	Do. Refunds	...	8 0 0	8 0 0	8 0 0	...	
	Do. Miscellaneous	...	741 8 0	741 8 0	741 8 0	...	
		...	39,248 7 6	39,248 7 6	39,248 7 6	...	
SITTANG.	Sale of Timber	...	10,231 8 0	10,231 8 0	10,231 8 0	...	Rs. 5416-12-4 shewn last year as outstanding is here omitted, the timber having reverted to the Department owing to the P. W. Department not taking delivery, at the rates fixed by this Department.
	Wood removed by purchasers &c.	...	1,379 8 6	1,379 8 6	1,379 8 6	...	
	Minor forest produce	...	20 0 0	20 0 0	20 0 0	...	
	Revenue from fines	...	953 4 0	953 4 0	953 4 0	...	
	Do. Refunds	...	52 14 0	52 14 0	52 14 0	...	
	Do. Miscellaneous	...	5,837 4 0	5,837 4 0	5,837 4 0	...	
		...	18,474 6 6	18,474 6 6	18,474 6 6	...	

Form No. 52.—*(Concluded.)*

Division.	Particulars.	Outstanding at commencement of year.	Value of Sales and other revenue during year.	Total.	Amount realized during year.	Balance due to the Departmental end of year.	Remarks.
Western.	Wood removed by purchasers &c.	...	3,757 5 0	3,757 5 0	3,757 5 0	...	
	Sale of Timber	...	137 0 0	137 0 0	137 0 0	...	
	Minor forest produce	...	311 0 0	311 0 0	311 0 0	...	
	Revenue from fines	...	26 0 0	26 0 0	26 0 0	...	
	Do. Miscellaneous	...	12 0 0	12 0 0	12 0 0	...	
		...	4,243 5 0	4,243 5 0	4,243 5 0	...	
Agency Office.	Teak supplied to Executive Engineer Thongzai ...	295 0 0					
	Outstanding on account of sale IX of 1875-76 ...	17,652 0 0	...	17,947 0 0	17,947 0 0	...	
	Sale of teak logs	...	7,71,332 9 10	7,71,332 9 10	7,63,493 6 9	7,839 3 1	
	Do. Shingles	...					
	Do. Woods of other kinds	...	42,363 3 2	42,363 3 2	42,363 3 2	...	
	Do. Do. Sleepers	...					
	Do Do. Scantlings	...	454 5 3	454 5 3	454 5 3	...	
	Wood removed by purchasers &c.	...	28,846 10 9	28,846 10 9	28,846 10 9	...	
	Minor forest produce	...	61 4 9	61 4 9	61 4 9	...	
	Revenue from fines	...	127 8 0	127 8 0	127 8 0	...	
	Do. Refunds	...	61 12 8	61 12 8	61 12 8	...	
	Do. Miscellaneous	...	2,874 4 11	2,874 4 11	2,874 4 11	...	
		17,947 0 0	8,46,121 11 4	8,64,068 11 4	8,56,229 8 3	7,839 3 1	
	Total Pegu Forest Circle ...	17,947 0 0	9,94,397 13 3	10,12,344 13 3	10,04,505 10 2	7,839 3 1	
	Total British Burma ...	36,536 9 4	15,22,770 12 1	15,59,307 5 5	15,51,468 2 4	7,839 3 1	

Form No. 54.

FOREST DEPARTMENT—BRITISH BURMA.

TENASSERIM.

Statement of Logs, Sleepers, and other scantlings, cut and exported during the year 1876-77.

Division.	Forest Range.	Locality.	Description of timber and scantlings.	On hand from previous year.		Cut during current year.		Total.		Disposed of during current year.			Closing Balance.	
				No.	C. Feet.	No.	C. Feet.	No.	C. Feet.	How disposed of.	No.	C. Feet.		
Salween Division		Balance from last year	...	4,937	1,99,285									
	Beeling ...	...	Teak logs ...	...	...	403								
	Domdamee ...	...	...	...	...	2,931								
	III. Division ...	...	...	...	...	11	...	...	...	Converted ...	9,232	3,20,750		
	Thoungyeen ...	...	...	...	...	9,368	...	...	...	Sold	3,353	1,17,355		
	Lower do. ...	...	...	...	...	134								
	Attaran ...	...	...	...	...	4,564								
		Total ...	...	4,937	1,99,285	17,411	6,12,650	22,348	8,11,935	...	12,585	4,38,105		
	Drift from various sources.	...	Teak logs ...	...	...	5,915	1,77,450	5,915	1,77,450	Sold	1,540	52,077		
										Restored to claimants	2,037	91,650		
										Expended for Government purposes...	573	25,750		
		Total ...	...	...	...	5,915	1,77,450	5,915	1,77,450	...	4,150	1,69,477		
	Domdamee ...	...	Thitka ...	...	...	281	...	...	...	Sold	131	9,836		
	Attaran ...	...	Padouk ...	...	...	498	...	...	...	Do.	267	2.302		
	Ditto ...	...	Other kinds ...	...	...	1	...	...	...	Other kinds ...	57	1,910		
	Thoungyeen ...	...	Pine ...	...	...	3	...	...	...	Shipped for Admiralty	12	300		
		Total ...	...	...	...	783	29.225	783	29,225	...	467	14,348		
Mergui or South Tenasserim.			Chee ...	...	...	6								
			Gangaw ...	...	...	2								
			Sinkozee ...	...	...	3								
		Total ...	...	...	...	11	175	11	175					
			Sleepers ...	...	...	1,000								
			Ditto ...	...	...	100								
		Total ...	...	...	...	1.100	3,875	1,100	3,875	Shipped for sale to Calcutta ...	1,100	3,875		
		Total Tenasserim Forest Circle ...	...	4,937	1,99,285	25,220	8,23,375	30.157	10,22,660	...	18,302	6,25,805	11,855	3,96,855

Form No. 54.

FOREST DEPARTMENT—BRITISH BURMA.

PEGU FOREST CIRCLE.

Statement of Logs, Sleepers and other Scantlings cut and worked during the year 1876-77.

Division.	Forest.	Locality.	Description of Timber and Scantling.	On hand from previous year.		Cut during current year.		Total.		Disposed of during current year.			Closing balance.		Remarks.
				No.	Cubic feet	No.	Cubic feet.	No.	Cubic feet.	How disposed of	No.	Cubic feet.	No.	Cubic feet.	
THARRAWADDIE			Balance on hand ...	46	...	...	...	46							
	Thongzai ...	...	Teak logs ...	...	...	403	...	403	...						
	Beeling ...	...	...	...	...	358	...	358	...						
		Koon ... Beeling ... Kadin ...	...	...	...	360	...	360	...	6,607 logs sent to Rangoon. 686 logs sold to Railway Department. 2 logs sold to private parties.					
	Mokkah ...	...	...	...	...	300	...	300	...						
	Minhla ...	...	...	...	...	1,094	...	1,094	...						
	Gamoung ...	...	...	...	...	497	...	497	...						
	Toung ...	...	...	...	...	534	...	534	...						
	Boben ...	...	...	...	...	1,348	...	1348	...						
	Mimbo ...	...	...	...	...	441	...	441	...						
	Shaboung ...	...	...	...	...	730	...	730	...						
	Shoaylay ...	...	...	...	...	960	...	960	...						
	Tsatpoke ...	...	...	...	...	150	...	150	...						
	Toungnyo ...	...	...	...	...	2,099	...	2,099	...						
	Total Logs...	...	...	46	2,170	9,274	4,60,171	9,320	4,62,341	...	7,295	3,68,402	2,025	93,939	
		Irrawadie drift.	Teak refuse Sleepers ...	...	...	110	4,730	108	4,730	Sold to private parties.	108	4,730	...	...	
			Teak logs ...					2		„ Myanoung Jail.	2				
			Found imbedded in mud.	...	...	225	9,775	225	9,775	Returned to claimants.	113	4,959	112	4,816	
	Total ...	...	...	...	...	335	14,505	335	14,505	...	223	9,689	112	4,816	
		...	Teak refuse sleepers ...	...	...	36,500	54,750	36,500	54,750	Sold to Railway Department.	36,500	54,750	...	...	
		...	„ Scantlings ...	...	...	57,450	40,495	57,450	40,495		57,450	40,495	...	...	
			Total ...	...	...	93,950	95,245	93,950	95,245	...	93,950	95,245	...	...	
		...	Teak Slabs ...	...	...	428	150	428	150	Sold to private parties	428	150	...	...	

THAREWADDIE.	Gamoung ...	...	Pynkadoe ...	...	...	564	...	564	...	Sold to Railway Department.	564	...	...	...
	Mimboo ...	...	...	...	..	74	...	74	...		74	...	...	...
	Minhla ...	...	...	...	...	75	...	75	...		75	...	...	...
	Mokkah ...	...	...	...	...	569	...	569	...		569	...	...	...
			Total ...	...	...	1,282	50,650	1,282	50,650	...	1,282	50.650	...	...
	...	...	Sleepers ...	...	...	101	151	101	151	Sold to Railway Dept.	101	151		
	...	...	Yemmanay ...	..	...	3	129	3	129	„ private parties	3	129		
			Total ...	...	...	104	280	104	280	...	104	280	...	...
			Grand Total Pieces ...	46	2,170	1,05,373	6,21,001	1,05,419	6,23.171	...	1,03,282	5,24,416	2,137	98,755
PROME.	Mindoon ...	...	Balance ...	26	650	1,241	63,297	1,267	63,947	2,322 logs sent to Rangoon	2,322	1,23,731		
	Nawing ...	...	...	...	...	1,211	60,704	1,211	60.704	285 sold to P. W. Department. 23 lost or expended on Government work.	112 296			
			Total Logs ...	26	650	2,452	1,24,001	2,478	1,24,651	...	2,730	1,23,731	...	...
	Mindoon ...	...	Engyn and Theya ...	...	...	120	2,310	120	2,310	Sold to P. W. Dept.	140	1,500		
	...	...	Teak planks ...	...	...	250	100	250	100		350	100		
	...	...	Saplings ...	...	...	583	...	583	...		...	...		
	...	...	Fuel heaps ...	...	...	6	...	6	.		...	...		
	...	...	Drift timber ...	...	...	462	19,866	462	19,866	Returned to claimants 470 sent to Rangoon 80.	550	19,596		
	...	...	Awlay and Mathats ...	...	...	376	1,880	376	1,880	Sold to purchasers 420.	420	1.880		
			Total ...	...	...	1,797	24,156	1,797	24.156	...	1,460	23,076	...	...
			GRAND TOTAL ...	26	650	4,249	1,48,157	4,275	1,48.807	...	4,190	1,46,807	85	2,000
SITTANG.	...	...	Balance ...	32	...	...	...	32	...					
	...	...	Padouk . ..	36	...	...	...	36	...				36	
	Myolah ...	...	...	...	...	670	...	...	...					
	Yayanee ...	...	...	...	...	28	...	...	...					
	Swah ...	..	...	...	...	764	...	...	...	1,401 Logs sold locally. 4,074 Sent to Rangoon.				
	Khaboung ...	...	...	...	...	290	...	...	...					
	Boukozwah ...	...	...	...	...	188	...	...	...					
	Hpyoo ...	...	...	...	...	874	...	...	...					
	Bymbya and Gwaythay ...	...	...	...	...	285	...	...	...					
	Koonoung ...	...	...	...	...	369	...	...	...					
			Carried over ...	68	...	3,468	...	...	...	...	...	...	36	...

Form No. 54.—*(Continued.)*

Division.	Forest.	Locality.	Description of Timber and Scantlings.	On hand from previous year.		Cut during current year.		Total.		Disposed of during current year.			Closing balance.		Remarks.
				No.	Cubic feet.	No.	Cubic feet.	No.	Cubic feet.	How disposed of.	No.	Cubic feet.	No.	Cubic feet.	
			Brought forward ...	68	...	3,468	...	...	...	...	...	...	36	...	
Sittang.	Kannee ...	...	...	...	...	391	...	...	...						
	Thoukyagat ...	...	...	...	...	262	...	...	...						
	Moong and Youkthawa ...	...	...	...	...	318	...	...	...						
	Padah ...	...	...	...	...	644	...	...	...						
			Total ...	68	2,170	5,083	2,70,415	5,151	2,72,585	...	5,115	2,71,466	36	1,119	
	...	...	Woods of other kinds ...	...	...	993	50,852	993	50,852	993 Sent to Rangoon.					
	...	...	Drift teak various forests.	...	...	2,250	96,615	2,250	96,615	1,730 Restored to claimants. 193 Sold.			171		
	...	...	Wood of other kinds ...	...	...	150	6,000	150	6,000	156 Sent to Rangoon restored to claimants 27 sent to Rangoon 24.			99		
			Total ...	...	...	3,393	1,53,467	3,393	1,53,467	...	3,123	1,42,154	270	11,313	
			Grand total logs.	68	2,170	8,476	4,23,882	8,544	4,26,052	...	8,238	4,13,620	306	12,432	
Rangoon.	Pounglin ...	...	...	...	...	547	...	...	...	2,173 Logs sent to Rangoon. 40 do. do. Contractors timber 41 Drift sold to purchasers. 78 sent to Rangoon Depôt.					
	Magayee ...	...	...	...	...	737	...	...	...						
	Pegu ...	...	...	...	...	872	...	...	...						
			Total ...	...	...	2,156	1,07,071	2,156	1,07,071						
	Pounglin ...	...	Woods of other kinds ...	...	...	17	799	17	799						
	...	...	Drift timber ...	...	...	159	6,837	159	6,837						
			Grand Total logs ...	...	...	2,332	1,14,707	2,332	1,14,707	...	2,332	...	...	...	

AGENCY.	...	...	Balance ...	14,687	5,97,630	...	...	14,687	5,97,630	16,608 Logs and sleepers sold by public auction and private sale.						In addition 3,16,546 shingles were received and made over to the Railway, these averaged 106 tons.
	...	...	Sleepers other kinds ...	..	...	4,411	6,616	4,411	6,616							
	...	...	,, Teak ...	...	...	7,992	11,988	7,992	11,988							
	...	...	Woods of other kinds.													
	..	...	Logs ...	...	...	230	10,810	230	10,810							
	...	...	Scantlings ...	...	...	1,587	950	1,587	950				12,898			
			Total ...	14,687	5,97,630	14,220	30,364	28,907	6,27,994	...	...	...	12,898	3,62,963		
	...	...	Drift timber ...	...	...	599	25,757	599	25,757	376 restored to claimants. 223 sold.						
			GRAND TOTAL ...	14,687	5,97,630	14,819	56,121	29,506	6,53,751	...	16,608	2,90,788	12,898	3,62,963		
WESTERN.	...	Drift	Teak ...	...	...	5	250	5	250	Sold locally.	5	250	...	...		
	...		Woods of other kinds ...	...	...	145	5,800	145	5,800	...	...	...	145	5,800		
			Total ...	...	...	150	6,050	150	6,050	...	5	250	145	5,800		
			Total Pegu Forest Circle.	14,827	6,02,620	1,35,399	13,69,918	1,50,226	19.72,538	...	1,34,655	14,90,588	15,571	4,81,950		
			GRAND TOTAL B. B.	19,764	8,01,905	1,60,619	21.93,293	1,80,383	29,95,198	...	1,52,957	21,16,393	27,426	8,78,805		

Form No. 55.

FOREST DEPARTMENT—BRITISH BURMA.

Statement of Timber and other produce brought to Depôt from the different Forest Divisions during the year 1876-77.

Division.	Forests.	Description of Timber &c.														Number of		Total of each Division.		Remarks.
		Doogies.	Loozars.	Yatthits.	Yard pieces.	Mast. pieces.	Thitka and Thitkadoe.	Squares.	Woods of other kinds.	Crooks.	Teak sleepers unsound.	Teak sleepers metre guage.	Laizah.	Padouk.	Pyinkadoe Sleepers.	Pieces.	Cubic Feet.	Pieces.	Cubic Feet.	
Tharrawaddie	Shoay Lay ...	118	346	169	5	...	...	...	...	...	...	...	...	...	...	638	33,809			
	Shaboung ...	291	255	32	5	...	...	...	...	...	...	...	...	...	...	583	30,895			
	Htoo ...	597	386	147	9	...	...	1	...	...	...	...	...	...	...	1,140	61,411			
	Boben ...	465	546	62	5	...	...	...	...	...	...	...	...	...	...	1,078	57,126			
	Minlah ...	88	24	11	...	...	...	1	...	...	...	...	...	...	...	124	6,571			
	Mokkah ...	90	4	10	3	...	...	...	...	...	...	...	...	...	...	107	5,670			
	Toung Nyo ...	1,057	754	173	55	3	...	...	...	...	...	...	...	...	...	2,042	109,211			
	Thongzau ...	83	141	17	...	...	...	...	...	...	...	...	...	...	...	243	12,877			
	Beeling ...	112	229	125	3	...	...	2	...	...	...	...	...	...	...	471	24,960			
	Mimboo	112	64	4	10	...	...	...	...	...	...	...	...	...	...	190	10,068			
																		6,616	352,598	
Rangoon ...	Zamayee ...	594	58	31	48	4	...	...	...	...	...	...	...	...	...	735	38,949			
	Pegu ...	585	192	25	72	1	...	...	...	...	...	...	...	...	...	875	47,369			
	Pounglin ...	235	172	140	...	...	17	...	...	...	...	...	...	...	...	564	29,887			
																		2,174	116,205	
Prome ..	Nawing ...	558	159	264	2	...	...	...	...	...	...	...	...	...	...	983	52,091			
	Oakpho ...	52	6	...	...	...	...	...	...	...	...	...	...	...	...	58	3,073			
	Mindoon ...	766	210	247	18	...	1	...	...	...	...	...	...	...	...	1,242	66,816			
																		2,283	121,980	
Sittang ...	Swah ...	197	325	54	...	...	...	...	...	...	...	...	...	...	...	576	30,523			
	Gwaythay ...	55	92	4	...	...	...	...	...	...	...	...	...	...	...	151	8,001			
	Pyoo ...	305	460	59	9	...	...	...	...	...	...	...	...	...	...	833	44,142			
	Kahboung ...	162	171	10	5	...	93	...	...	...	...	...	...	...	...	441	23,369			
	Myolah ...	90	140	25	...	...	...	...	...	...	...	...	...	...	...	255	13,513			
	Boukogwah ...	50	94	39	...	...	11	...	...	...	...	...	...	...	...	194	10,280			
	Byimbyai ...	41	41	11	...	...	...	...	...	...	...	...	...	...	...	93	4,928			
	Paddah ...	314	231	85	14	...	151	...	...	...	...	...	...	...	...	795	43,129			

cubic feet were received from Tenasserim and made over to the Railway.

SITTANG Continued.	Kannee ...	93	38	36	...	...	60	...	...	...	...	...	...	...	...	227	12,029			
	Yeanee ...	16	8	4	...	...	...	...	...	...	...	...	...	...	...	28	1,489			
	Moong ...	82	187	49	...	...	...	...	...	...	...	...	...	...	...	318	16,851			
	Moonong ...	79	96	92	...	...	172	...	...	...	...	...	...	...	...	439	23,264			
	Thoukyaghat ...	50	70	38	...	...	481	...	...	...	—	...	20	...	...	659	34,922			
	Shoay-gyeen ...	13	14	5	...	...	...	...	...	...	...	...	...	...	...	32	1,695			
TENASSERIM ...	Maulmain ...	...	...	...	...	...	...	...	...	...	...	7,913	...	...	...	7,913	10,869	5,041	2,68,135	In addition 316,546 Shinggles containing 5,295
	Ditto ...	...	...	...	..	...	...	...	...	...	...	...	...	216	...	216	7,233			
	Ditto ...	...	...	...	...	...	...	...	...	...	...	...	...	...	4,411	4,411	6,616			
	Drift Timber ...	170	397	116	29	...	34	...	11	...	...	...	...	...	...	757	40,134	12,540	24,718	
	Transfer from Drift Timber Register ...	66	15	...	3	...	10	...	...	...	..	...	...	...	...	94	4,981			
	Found in excess ...	...	...	...	...	...	...	...	12	17	79	...	...	...	...	106	949	959	46,064	
	Obtained by Conversion. ...	...	...	...	...	...	...	...	1,587	...	...	...	...	...	...	1,587	969	1,587	969	
																	Total ...	31,200	9,30,669	

Form No. 56.

FOREST DEPARTMENT—BRITISH BURMA.

Annual Account of Timber and other Produce for the year 1876-77.

Particulars.	PEGU. Pieces. No.	PEGU. Pieces. Tons.	TENASSERIM. Pieces. No.	TENASSERIM. Pieces. Tons.	BRITISH BURMA. Total. No.	BRITISH BURMA. Total. Tons.
Balance in hand at commencement of year ...	14,827	12,052	86,507	89,077	1,01,334	1,01,129
Number of Teak Logs brought from the Forest by Contractors and Government Agency	18,965	19,733	17,411	12,255	36,376	31,986
Ditto Woods of other kinds ...	1,363	1,298	794	584·5	2,157	1882·5
Ditto " Sleeper pieces ...	1,282	513	...	...	1,282	513
Ditto " Sleepers	4,512	135	1,100	77·5	5,612	212·5
Ditto " Sleeper Teak	44,492	1,334	...	...	44,492	1,334
Ditto Drift Confiscated and Waif Timber	4,481	3,550	5,915	3,549	10,396	7,099
Ditto of Logs brought from the Forests by Permit Holders	3,476	3,475	2,086	1,725	5,562	5,200
CONVERTED TIMBER TEAK. Slabs ...	428	3	...	...	428	3
CONVERTED TIMBER TEAK. Squares ...	...	...	4,505	3,706	4,505	3,706
			Tons.			
CONVERTED TIMBER TEAK. Scantlings ...	57,700	812	4,121	4,121	61.821	4.933
CONVERTED TIMBER TEAK. Shingles ...	...	...	449	449	449	449
Woods of other kinds Scantlings ...	1,587	19	...	...	1,587	19
Prome.						
Saplings	583	...	...	...	583	...
Fuel Heaps	6	...	...	...	6	...
Teak Shingles (3.16,546)	...	106	...	...	...	106
Kadoe Revenue Station.						
Number of Logs registered for duty in 1876-77.	...	...	1,32,022	1,20,352	1,32,022	1.20,352
Total of Logs and Sleepers	1,53.702	43,030	2,54,910	2,35,894	4,08,612	2,78,924

Particulars.	PEGU. Pieces. No.	PEGU. Pieces. Tons.	TENASSERIM. Pieces. No.	TENASSERIM. Pieces. Tons.	BRITISH BURMA. Total. No.	BRITISH BURMA. Total. Tons.
Number of Logs, pieces, Sleepers and Scantlings, &c. sold during the year ...	1,31,865	27,810	13,180	9,531	1,45,045	37,341
Ditto Logs sold to Permit Holders in 1876-77	3,476	3,475	2,086	1,725	5,562	5,200
Ditto Logs converted for Government purposes	20	19	9,232	6,415	9,252	6,434
Ditto ditto Expended ditto ...	3	3	573	515	576	518
Ditto Logs lost in transit or perished.	138	71	...	...	138	71
Ditto Logs delivered to claimants on proof of owner-ship ...	2,619	2,005	2,037	1,833	4,656	3,838
Ditto Shipped Ex: Dreadnought for Home Government ...	...	...	1,243	1,243	1,243	1.243
Ditto ditto Admiralty ...	...	...	12	6	12	6
Ditto for sale at Calcutta, sleepers ...	...	...	1,100	77	1,100	77
Ditto Free grants	10	8	...	...	10	8
Kadoe Revenue Station						
Number of Logs cleared at Kadoe on payment of duty in 1876-77	...	...	1,20,127	1,15,301	1,20,127	1,15,301
By balance on 31st March 1877	15,571	9,639	1,05,320	99,248	1,20,891	1,08,887
Total of Logs and Sleepers ...	1,53.702	43,030	2,54,910	2,35,894	4,08,612	2.78,924

Form No. 57.

FOREST DEPARTMENT—BRITISH BURMA.

TENASSERIM FOREST CIRCLE

Statement showing the amount realized on account of the different classes of Timber and other Produce sold during 1876-77.

Division.	Description of Timber, &c.	No. of pieces, &c., sold.	Cubic contents.	Amount realized and due on account of sales.	Average amount per log.	Average cubical contents per log.	Average amount per ton.	Remarks
ROUND LOGS ...	Yatthits	90	2,340	888 8 0	9 13 11	26	18 15 7	
	Loozars	848	28,832	8,341 14 0	9 13 4	34	14 7 5	
	Doogies	591	20,685	5,864 10 0	9 14 7	35	14 2 9	
	Mixed round logs ...	1,833	93,099	41,204 8 0	22 7 5	50	22 2 0	
SQUARES AND CONVERTED TIMBER.	Squares, doos, doodoos and thokes	2,762	84,650	70,165 0 0	...	30	41 7 0	
	Scantlings (tons) ...	2,913	145,666	97,559 0 0	...	...	33 7 9	
	Shingles (do.) ...	449	22,450	14,135 5 0	...	...	...	
	Butt ends	...	...	1,561 11 0	...	...	...	
SMALL LOGS ...	Short pieces	3,239	64,780	21,521 6 0	6 10 3	20	16 9 9	
	Total ...	12,725	462,502	261,241 14 0	20 8 5	...	28 3 10	
WOODS OF OTHER KINDS.	Thitka	131	9,836	3,169 13 0	24 3 0	75	16 1 8	
	Padouk	67	2,200	1,980 0 0	29 8 10	34	45 0 0	
	Pyimma	52	1,560	416 0 0	8 0 0	30	13 8 0	
	Pine	5	350	150 0 0	30 0 0	70	21 6 10	
	Padouk branches (pieces)..	200	102	90 10 0	...	...	44 1 11	
	Total ...	455	14,048	5,806 7 0	12 12 2	...	34 14 5	
	Grand total ...	13,180	476,550	267,048 5 0	20 5 4	...	...	

Form No. 57.

FOREST DEPARTMENT—BRITISH BURMA (PEGU CIRCLE.)

Statement showing the amount realised on the different classes of Timber and other produce sold during 1876-77.

Description of Timber &c.	Number of pieces &c., sold.	Cubic Contents	Amount realised and due on account of sales.	Average amount per log &c.	Average cubic contents per log.	Average amount per ton.	Remarks.
			RS. A. P.	RS. A. P.		RS. A. P.	
ROUND LOGS. Yatthits	1,286	33,436	18,782 0 0	14 9 8	26	28 1 4	
ROUND LOGS. Loozars	5,462	2,51,252	1,85,306 11 11	33 14 9	46	36 14 0	
ROUND LOGS. Doogies	12,220	7,00,811	5,65,886 5 8	46 4 11	57·3	40 5 11	
ROUND LOGS. Yard mast, keel and stem pieces	991	86,217	46,570 0 0	46 15 10	87	27 0 1	
Squares Doos Doodoos, and Thokes ...	6	300	220 0 0	36 10 8	50	36 10 8	
SMALL PIECES. Crooks (boats)	17	34	11 0 0	0 10 4	2	16 2 9	
SMALL PIECES. Small pieces	1,016	20,320	9,784 0 0	9 10 0	20	24 1 2	
TOTAL ...	20,998	10,92,370	8,26,560 1 7	39 5 9	...	37 13 4	
Woods of other kinds Logs ...	2,412	1,12,494	61,415 12 6	25 7 4	46·6	27 4 9	
Woods of other kinds Sleeper pieces.	1,282	25,640	3,829 0 0	2 15 9	20·	7 7 5	
TOTAL ...	3,694	1,38,134	65,244 12 6	...	...	...	
Confiscated drift and waif Logs	960	44,160	10,410 12 8	10 13 6	46	11 12 8	
SLEEPERS. Teak	39,944	59,916	13,455 3 0	0 5 4	1·5	11 3 7	
SLEEPERS. Woods of other kinds ...	5,965	8,948	7,244 1 3	1 3 5	1·5	40 7 7	
TOTAL ...	45,909	68,864	20,699 4 3	...	...	...	
Converted timber Teak	57,700	40,558	8,124 1 6	0 2 2	...	10 0 2	
ditto Shingles (3,16,546) ...	...	5,300	5,983 6 4	...	...	56 7 1	
ditto Slabs	428	150	37 8 0	0 1 4	...	12 8 0	
ditto Woods of other kinds ...	1,587	969	454 5 3	0 4 7	·6	23 7 1	
TOTAL ...	59,715	46,977	14,599 5 1	...	...	...	
Teak Saplings	583	...	80 0 0	...	...	...	
Fuel heaps	6	...	16 0 0	...	...	...	
TOTAL ...	589	...	96 0 0	...	...	...	
GRAND TOTAL ...	1,31,865	13,90,505	9,37,610 3 8	...	...	...	

Form No. 57.

FOREST DEPARTMENT—BRITISH BURMA.

Statement showing the amount realized on account of the different classes of Timber and other Produce sold during 1876-77.

Description of Timber.		Number of pieces &c. sold.	Cubic Contents.	Amount realized and due on account of sale.	Average amount per log &c.	Average cubical contents of logs.	Average amount per ton.	Remarks.
				Rs. A. P.	Rs. A. P.		Rs. A. P.	
Round logs	Yatthits	1,376	35,776	19,670 8 0	14 4 7	26·	27 7 10	
	Loozars	6,310	2,80,084	1,93,648 9 11	30 11 0	44·4	34 9 1	
	Doogies	12,811	7,21,496	5,71,750 15 8	44 1 0	56·3	25 12 2	
	Yard, Mast, Keel and Stem pieces ...	991	86,217	46,570 0 0	46 15 10	87·	27 0 1	
	Mixed round logs	1,833	93,099	41,204 8 0	22 7 8	50·7	22 1 11	
Squares	Doos, Doodoos, and Thokes ...	2,768	84,950	70,385 0 0	25 6 10	30·6	41 6 9	
Small pieces	Crooks	17	34	11 0 0	0 10 4	2·	16 2 10	
	Short pieces	4,255	85,100	31,305 6 0	7 5 5	20·	18 6 3	
	Total ...	30,361	13,86,756	9,74,545 15 7	32 1 6	45·6	35 2 2	
Woods of other kinds	Logs	2,667	1,26,440	*67,131 9 6	25 2 9	47·4	26 8 9	*Includes Rs. 18,589-9-4 timber supplied to Gun Carriage manufactory Madras by Tenasserim Forest Circle.
	Sleeper pieces	1,282	25,640	3,829 0 0	2 15 9	20·	7 7 5	
	Branch pieces	200	102	90 10 0	0 7 3	·5	4 8 3	
	Total ...	4,149	1,52,182	71,051 3 6	17 1 11	36·4	23 5 6	
	Confiscated Drift and waif logs ...	960	44,160	10,410 12 3	10 13 4	46·	11 12 7	
Converted Timber	Teak Scantlings	60,613	1,86,224	1,05,683 1 6	1 11 10	3·7	28 6 0	
	Shingles ... ... Tons	449	27,750	20,118 11 4	44 12 11	...	36 3 11	
	Slabs	428	150	37 8 0	0 1 4	·3	12 5 4	
	Buttends	...	...	1,561 11 0	...	...	...	
	Woods of other kinds	1,587	969	454 5 3	0 4 7	·6	23 6 3	
	Total ...	63,077	2,15,093	1,27,855 5 1	...	...	29 4 1	

Form No. 57.—*(Concluded.*

Description of Timber.	Number of piecees &c. sold.	Cubic Contents.	Amount realized and due on account of sale.	Average amount per log &c.	Average cubical contents of logs.	Average amount per ton.	Remarks.
Teak Saplings	583	...	80 0 0	...	...	...	
Fuel heaps	6	...	16 0 0	...	...	...	
Total ...	589	...	96 0 0	...	...	...	
Sleepers ... ... Teak	39,944	59,916	13,455 3 0	0 5 4	1·5	11 3 7	
Sleepers ... ... Woods of kinds	5,965	8,948	7,244 1 3	1 3 5	1·5	60 12 2	
Total ...	45,909	68,864	20,699 4 3	0 7 2	1·5	15 0 2	
Grand total ...	1,45,045	1,867,055	12,04,658 8 8	...	12·1	...	

Deduct amount due but not realized during the year			7,839 3 1
			1,196,819 5 7
Add			
Amount realized on account of former years			17,947 0 0
Total shown as Revenue on account of sales under Head I 1 a		1,179,334 0 4	1,214,766 5 7
on account of refuse timber 2 a		12,150 10 9	
3 less salvage		23,281 10 6	

Form No. 58.

FOREST DEPARTMENT—BRITISH BURMA.

TENASSERIM FOREST CIRCLE.

Statement showing the amount expended on the different classes of Timber and other produce brought to the Depôt during 1876-77.

	Particulars of Timber.	Number of		Expenditure.			Average.			Remarks.
		Pieces.	Cubic contents.	Timber expenses.	Quota of all other expenditure chargeable against timber &c.	Total amount chargeable against Timber. &c.	Amount per piece.	Cubic contents per piece.	Amount per ton.	
				Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.		Rs. A. P.	
Round logs	Yatthits...	1,104	28,700	1,22,423 3 0	88,259 14 3	2,10,683 1 3	12 1 7	26	...	
	Loozars ...	3,253	146,350					45	...	
	Doogies...	4,527	267,050					59	...	
	Pieces ...	8,527	170,550					20	...	
Total brought out by Contractors Teak		17,411	612,650	1,22,423 3 0	88,259 14 3	2,10,683 1 3	12 1 7	35·18	17 3 1	N. B. In this statement all charges incurred in the conversion of timber are thrown out, as they do not form any part of the expenditure incurred in the Exploitation of the timber here represented.
Drift confiscated and waif Timber		5,915	177,450	20,376 2 0	25,563 14 3	45,940 0 3	7 12 3	30	12 15 1	
Woods other than Teak ...	Logs ...	794	29,250	7,048 14 0	4,213 13 3	11,262 11 3	14 2 11	36·8	19 4 0	
	Sleepers...	1,100	3,850	2,750 0 0	554 10 3	3,304 10 3	3 0 0	3·47	42 14 8	
		1,894	33,100	9,798 14 0	4,768 7 6	14,567 5 6	...	...	...	
Total Tenasserim ...		25,220	823,200	1,52,598 3 0	1,18,592 4 0	2,71,190 7 0	...	...	16 7 6	

Note.—Quota averages Rs. 7-3-3 per ton.

Form No. 58.

FOREST DEPARTMENT—BRITISH BURMA.

PEGU FOREST CIRCLE.

Statement showing the Amount Expended on the different classes of timber and other produce brought to the Depôt during 1876-77.

	Particulars of Timber.	No. of. Pieces.	No. of. Cubic Contents.	Expenditure. Timber expenses.	Expenditure. Quota of all other Expenditure chargeable against timber &c.	Expenditure. Total amount chargeable against timber &c.	Average. Amount per piece.	Average. Cubic contents per piece.	Average. Amount per ton.	Remarks.
				RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.			
ROUND LOGS	Yatthits	2,077	58,156	16,875 10 0	5 11 7 per log.	...	13 13 8	28	24 11 10	
	Loozars	6,150	3,01,350	67,617 15 6		...	16 11 5	49	17 0 10	
	Doogies	8,448	5,59,232	1,21,880 0 0		...	20 1 10	66	15 4 7	
	Yard, mast, keel, and stem pieces.	316	28,440	9,251 3 8		...	35 0 0	90	19 2 5	
SQUARE	Squares, Doodoos, and Thokes	...	...	...		...	...	...	...	
SMALL LOGS	Crooks and short pieces ...	1,974	39,480	8,714 11 6		...	10 2 3	20	25 5 7	
TOTAL ...	...	18,965	9,86,658	2,24,339 8 8	1,08,554 13 11	3,32,894 6 7	...	...	16 13 11	
Refuse teak worked out by the Railway dept.				...						Timber expenses borne entirely by Railway, hence timber is merely debitable with "quota of all other Expenditure."
TEAK ...	Sleepers	36,500	54,750	...	...	...	...	1·5	...	
	Planks	250	100	...	...	...	...	·4	...	
	Scantlings	57,450	40,495	...	5 11 7 per ton.	...	...	·7	...	
	Slabs	428	150	...		...	...	...	...	
Other kinds...	Sleepers	101	151	...		...	...	1·5	...	
TOTAL ...	...	94,729	95,646	...	10,927 0 7	10,927 0 7	...	...	...	
WORKED OUT BY GOVT. AGENCY ...	Teak Sleepers	7,992	11,988·0	9,284 0 0	...	...	1 5 4	1·5	...	
	Teak Saplings	583	...	53 12 9	...	...	...	...	...	
	Fuel heaps	6	...							
TOTAL ...	...	8,581	11,988·0	9,337 12 9	1,372 0 0	10,709 12 9	...	...	...	
DRIFT WAIF and CONFISCATED ...	Teak Logs	3,810	1,63,830	11,570 10 9	...	...	8 12 2	43	10 2 11	
	Nathat and Aulay ...	376	1,880	...	5 11 7 per log.	...	...	...	...	
	Other kinds	295	11,800	735 0 0		...	8 3 5	40	10 4 4	
TOTAL ...	...	4,481	1,77,510	12,305 10 9	24,819 1 4	37,124 12 1	8 7 6	39·5	10 15 5	
WOODS OF OTHER KINDS	Logs	1,363	64,900	13,118 14 0	...	...	15 5 7	47	16 5 3	
	Sleeper pieces	1,282	25,650	3,863 7 0	5 11 7 per log and ton.	...	8 11 9	20	21 13 10	
	Scantling	1,587	950	190 0 0				...	...	
	Sleepers	4,411	6,616·5	...	...	...	...	1·5	15 10 0	
TOTAL ...	...	8,643	98,116·5	17,172 5 0	15,248 10 0	32,420 15 0	...	...	...	
GRAND TOTAL ...	...	1,35,399	13,69,918·5	2,63,155 5 2	1,60,921 9 10	4,24,076 15 0	...	...	15 7 7	
TOTAL BRITISH BURMA ...	...	160,619	2,193,118·5	4,15,753 8 2	2,79,513 13 10	6,95,267 6 0	...	...	15 13 7	

Form No. 59.

FOREST DEPARTMENT—BRITISH BURMA.

Statement shewing the revenue derived from, and expenditure incurred on Timber and other produce sold to Public Departments from Depôts during the year 1876-77.

Division.	Name of Department.	Particulars of supplies.	Amount supplied.	Rate. At.	Rate. Per.	Amount of Revenue. Due.	Amount of Revenue. Amount.	Amount of Revenue. Outstanding.	Cost of Forest Department. Timber expenses under A I.	Cost of Forest Department. *Quota of all other expenditure chargeable against Timber &c.	Cost of Forest Department. Total.	Comparison of Revenue and Expenditure. Surplus.	Comparison of Revenue and Expenditure. Deficit.
						Rs. A. P.	Rs. A. P.		Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Salween.	Irrawaddie Valley (State) Railway	Shingles 3,17,550...	106· 0	56/ 7	Ton.	5,983 6 4	5,983 6 4	...	2,120 0 0	606 11 10	2,726 11 10	3,256 10 6	
		Pynkadoe sleepers .	114·48	53/ 5	„	6,101 10 0	6,101 10 0	...	5,342 6 4	...	5,342 6 4	759 3 8	
		Ditto ...	17· 7	26/12	„	474 2 3	474 2 3	...	416 8 0	...	416 8 0	57 10 3	
	Gun carriage Manufactory Madras	Padouk ...	142· 9	130/	„	18,589 9 4	18,589 9 4	...	3,165 0 0	9,132 7 2	12,297 7 2	6,292 2 2	
	Total Tenasserim ...	...	381·08	...	...	31,148 11 11	31,148 11 11	...	11,043 14 4	9,739 3 0	20,783 1 4	10,365 10 7	...
Prome.	Executive Engineer 4th Railway Division ...	Teak timber	145·72	55/	„	8,014 13 3	8,014 13 3	...	1,652 14 0	912 3 9	2,565 1 9	5,996 15 6	
		„	9·62	50/	„	431 2 9	431 2 9						
		„	3·32	35/	„	116 1 3	116 1 3						
		„	50·57	55/	„	2,781 4 0	2,781 4 0	...	672 2 0	356 8 0	1,028 10 0	2,197 8 0	
		„	2·91	50/	„	145 8 0	145 8 0	...					
		„	8·55	35/	„	299 6 0	299 6 0	...					
		Engyin and Theya ...	11·11	14/	„	155 9 3	155 9 3	...	71 0 0	63 13 0	134 13 0	20 12 3	
			12·65	14/	„	177 2 6	177 2 6	...	81 0 0	72 11 0	153 11 0	23 7 6	
	Assistant Engineer Prome ...	Engyin and Theya ...	6·25	20/	„	125 0 0	125 0 0	...	39 0 0	35 15 0	74 15 0	50 1 0	

Form No. 59.—*(Concluded.)*

Division.	Name of Department.	Particulars of supplies.	Amount supplied.	Rate. At.	Rate. Per.	Amount of Revenue. Due.	Amount of Revenue. Amount.	Amount of Revenue. Outstanding.	Cost of Forest Department. Timber expenses under A I.	Cost of Forest Department. *Quota of all other expenditure chargeable against Timber &c.	Cost of Forest Department. Total.	Comparison of Revenue and Expenditure. Surplus.	Comparison of Revenue and Expenditure. Deficit.
Tharrawaddie.	Assistant Commissioner Allanmyo	Allay and Nathat teak.	35·0	35/	„	1,225 0 0	1,225 0 0	...	...	201 9 7	201 9 7	1,023 6 5	
		...	285·70	...	...	13,470 15 0	13,470 15 0	...	2,516 0 0	1,642 12 4	4,158 12 4	9,312 2 8	...
	Executive Engineer Rangoon and Irrawaddie Valley (State) Railway ...	Teak ...	785· 3	50/	„	39,557 4 9	39,557 4 9	...	6,701 5 0	4,514 3 0	11,215 8 0	28,341 12 9	
		Teak refuse Sleepers	1095· 0	10/	„	10,950 0 0	10,950 0 0	...	...	6,288 12 0	6,288 12 0	4,661 4 0	
		Scantlings .	809· 9	10/	„	8,099 1 6	8,099 1 6	...	...	4,656 8 0	4,656 8 0	3,442 9 6	
		Pynkadoe...	513· 0	7/7/5	„	3,829 0 0	3,829 0 0	...	3,863 7 0	2,949 12 0	6,813 3 0	...	2,984 3 0
		Sleepers ...	3· 0	35/12	„	107 5 0	107 5 0	...	...	17 4 0	17 4 0	90 1 0	
	Myanoung Jail ...	Teak ...	2·86	34/12	„	99 4 9	99 4 9	...	28 12 6	11 7 2	40 3 8	59 1 1	
		...	3209· 6	...	...	62,642 0 0	62,642 0 0	...	10,593 8 6	18,437 14 2	29,031 6 8	36,594 12 4	2,984 3 0
Agency.	Executive Engineer Thongzai . Ordnance Department Rangoon	Teak ...	5· 9	50/	„	295 0 0	295 0 0	...	72 0 8	45 12 8	117 13 4	177 2 8	
		Padouk ...	1· 5	46/	„	69 6 9	69 6 9	...	36 0 0	8 10 0	44 10 0	24 12 9	
		...	7·4	...	...	364 6 9	364 6 9	...	108 0 8	54 6 8	162 7 4	201 15 5	
	Total Pegu ...	...	3422·16	...	...	76,477 5 9	76,477 5 9	...	13,217 9 2	20,135 1 2	33,352 10 4	46,108 14 5	
	Total British Burma ...	...	3803·24	...	...	1,07,626 1 8	1,07,626 1 8	...	24,261 7 6	29,874 4 2	54,135 11 8	56,474 9 0	2,984 3 0
											Deduct deficit ...	2,984 3 0	
											Balance for the Department	53,490 6 0	...

*Quota averages Rs. 5-12-0 per ton.

Form No. 60.

FOREST DEPARTMENT—BRITISH BURMA.

Abstract showing the Value of Timber and of Live and Dead Stock for the year 1876-77.

Discription of Timber and other Stock.	On hand at Commencement of year.		Received during the year.		Total.		Sold or otherwise disposed of, and lost during the year and allowance for depreciation.		On hand at close of the year.		Cause of loss and other particulars.
	No.	Value.	No.	Value.			No.	Value.			
		Rs. As. P.		Rs. As. P.		Rs. As. P.		Rs. As. P.		Rs. As. P.	
Timber stock ...	14,827	3,80,532 0 0	1,35,399	8,78,372 0 0	1,50,226	12,58,904 0 0	1,34,655	9,37,610 0 0	15,571	3,21,294 0 0	Does not include Permit Timber numbering 3,476, logs which merely paid duty and cleared.
Live stock ...	58	69,220 0 0	20	23,995 0 0	78	93,215 0 0	17	15,655 0 0	61	77,560 0 0	
Value of buildings and Officers and rest houses &c. ...	29	30,005 0 0	3	8,242 0 0	32	38,247 0 0	...	...	32	38,247 0 0	
Dead stock ...	...	11,702 0 0	...	5,068 0 0	...	16,770 0 0	...	325 0 0	...	16,445 0 0	
Total Pegu ...	...	4,91,459 0 0	...	9,15,677 0 0	...	14,07,136 0 0	...	9,53,590 0 0	...	4,53,546 0 0	
Timer Stock ...	4,937	44,974 0 0	23,220	5,44,579 0 0	30,157	5,89,553 0 0	18,302	2,67,049 0 0	11,855	3,22,504 0 0	
Live stock ...	3	3,300 0 0	...	...	3	3,300 0 0	...	...	3	3,300 0 0	
Value of building Officers rest houses &c. .	2	4,811 0 0	1	666 0 0	3	5,477 0 0	...	...	3	5,477 0 0	
Dead stock	...	3,677 0 0	...	2,121 0 0	...	5,798 0 0	...	504 0 0	...	5,294 0 0	
Kadoe duty ...	...	1,63,140 0 0	...	...	...	1,63,140 0 0	...	...	...	1,63,354 0 0	Estimated.
Total Tenasserim ...	...	2,19,902 0 0	...	5,47,366 0 0	...	7,67,268 0 0	...	2,67,553 0 0	...	4,99,929 0 0	
Grand Total B. B. .	...	7,11,361 0 0	...	14,63,043 0 0	...	21,74,404 0 0	...	12,21,143 0 0	...	9,53,475 0 0	

NOTE.—Difference in value at commencement and close of the year Rs 2,42,114-0-0.

Appendix A.

FOREST DEPARTMENT—BRITISH BURMA.

Comparative Statement showing the burdens which Foreign and British Timber have to bear before they reach a Port of Shipment.

Division and nature of Charges.	Charges.	Royalty.	Import.	Export.	Total.	REMARKS.
FOREIGN.	RS. AS. P.	RS. AS. P.	RS. AS. P.	RS. A. P.	RS. AS. P.	
Karennee and Shan States						
Price paid for logs launched into the water including Royalty to Chief Rupees 10 to 35 according to quality; average say	22 8 0	...	...	...	...	
Rafting charges from Kyodan to Kadoe per log	4 0 0	...	...	...	...	
Import duty at Kadoe per log ...	...	...	2 12 0	...	...	
Cost per log of ordinary good timber. laid down in Maulmain	...	...	...	...	29 4 0	Average contents per log—50 cubic feet.
Ningyan Forest.						
Royalty to the King of Burma depending upon special agreement and according to quality of logs, but say for an ordinary doogie of good quality...	...	8 0 0	...	...	...	
Expenses of felling, dragging and launching per log, say...	15 0 0	...	...	...	...	
Rafting charges from Ningyan to Toungoo per log, say	2 8 0	...	...	...	...	
Rafting charges from Toungoo to Rangoon per log say...	3 12 0	...	...	...	...	
Cost per log of ordinary, doogies of good quality laid down in Rangoon... ...	...	...	...	...	29 4 0	Ditto ditto 50 cubic feet.
Mandalay Forests.						
Royalty to the King depending upon special arrangement, and according to quality of logs, but say for ordinary doogies of good quality... ...	...	7 0 0	...	...	...	
Expenses of felling, dragging and launching per log say...	15 0 0	...	...	...	...	
Rafting charges from Ava to Rangoon per log	3 0 0	...	...	...	...	
Cost per log of an ordinary doogie laid down in Rangoon...	...	...	...	...	25 0 0	Ditto ditto 37 cubic feet.
British.						
Promo Permit Timber	20 0 0	7 0 0	...	...	27 0 0	
Sittang do do	20 0 0	7 0 0	...	...	27 0 0	
Salween do do	18 0 0	7 0 0 2 12 0	at	Kodoe.	27 12 0	
Tharrawaddie worked by Government Contractors	17 0 0	...	...	...	17 0 0	

Appendix B.

FOREST DEPARTMENT—BRITISH BURMA.

Statement exhibiting cost of feed and keep of Elephants of the Forest Department, British Burma, for the Official year 1876-77, *as compared with that of the Commissariat Department for the same period.*

Names of Division.	Number of Elephants kept.	Total cost of feed for the year.	Total cost of keep for the year.	Amount paid for medicines.	Amount paid for gear.	Total expenditure per annum.	Average cost for each animal per annum.	Average cost of a Commissariat Elephant for 1876-77.	Average cost per animal of the Forest Department per mensem.	Average cost per animal of the Commissariat Department per mensem.	Value of labor in cash receipts and work performed.
		RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
Salween ...	1	344 2 0	612 0 0	29 2 0	144 8 0	1,129 12 0	1,129 12 0	Rs. 434 10 0	94 2 4	Rs. 36 3 6	880 2 0
Mergui ...	2	171 7 0	547 5 8	1 12 0	10 12 0	731 4 8	365 10 4		30 7 6		144 0 0
TOTAL TENASSERIM FOREST CIRCLE ...	3	515 9 0	1,159 5 8	30 14 0	155 4 0	1,861 0 8	620 5 6		51 11 1		1,024 2 0
Rangoon ...	22	4,048 6 2	5,391 1 6	267 8 6	1,250 11 0	10,957 11 2	452 9 11		37 8 9		18,815 12 0
Tharrawaddie ...	6	1,064 5 9	2,133 2 3	19 13 6	27 14 6	3,245 4 0	540 14 0		45 1 2		7,676 0 0
Prome ...	4	530 4 0	946 14 3	13 12 0	16 2 9	1,507 1 0	376 12 3		31 6 4		2,142 8 0
Sittang ...	3	483 10 6	793 4 0	6 0 0	36 4 0	1,319 2 6	439 11 6		36 10 3		1,004 0 0
TOTAL PEGU FOREST CIRCLE ...	35	6,126 10 5	9,264 6 0	307 2 0	1,331 0 3	17,029 2 8	486 8 9	...	40 8 8	...	29,638 4 0
TOTAL BRITISH BURMA.	38	6,642 3 5	10,423 11 8	338 0 0	1,486 4 3	18,890 3 4	497 1 8	...	41 6 9	...	30,662 6 0

Appendix C.

FOREST DEPARTMENT—BRITISH BURMA.

List of Buildings in the Pegu Forest Circle whose cost exceed Rs. 200, and for the occupation of which no rent is paid.

Division.	No.	Name of Buildings.	Station.	Remarks.
Rangoon	1	Road Bungalow	Magayee.	Occasionally occupied by officers on inspection duty.
	1	Plantation Bungalow		
	1	Do. do.	Kyekpyoogan.	
	1	Revenue Station House	Khyasso.	
	4	Do. houses in course of construction...	Zoungtoo, Taulatai, Awine, and Hlaigoo.	
Central Depôt (Rangoon) ...	1	Central Depôt and Agency Office ...	Kemendine, Rangoon.	
	1	Overseer's quarters	Do.	
	7	Guard houses	Do. 1 at Poozoondoung.	
	1	Mahout's house	Do.	
	1	Elephant shed	Do.	
	1	Seasoning „	Do.	
Prome ... ... Western Prome.	1	Forest Office	Prome	This building is partly occupied by Forest Officers but no rent has yet been charged.
Tharrawaddie	9	Rest houses	(1) Quingyee (2) Euxine (3) Joebenine (4) Saigangally (5) Boben (6) Wyne (7) Tsanyuai (8) Quayma-keng (9) Koung-loung-dine.	
Sittang	1	Rest house	Pyoonchoung.	
Shwegyeen (S. D.) ...	1	Forest Office	Shwegyeen	Do. do.

N. B.—There are no Departmental buildings in the Pegu Forest Circle for which rent is paid by Forest Officers.

SPECIAL REPORT

ON THE

WORKING OF THE

REVENUE NOTIFICATION NOS. 33 & 34

OF

8th March 1876.

Circular from the Additional Conservator of Forests, British Burma, to all Divisional Officers,—No. 2032-580, dated Prome, the 29th January 1877.

I HAVE the honour to request that you will be good enough to submit to my Office, by the end of March, a complete report on the working of the system of permits for the 12 species of timber reserved under notification No. 33 of 8th March 1876, with special reference to the points noted below.

2. It is explained in section 1. of notification No. 34, dated 8th March 1876, that the system is not in force in forests legally constituted as Government forest reserves. In such forests Government has the sole control, and can sell their produce in any manner which is at the time being considered to be the most profitable and beneficial.

The ultimate aim of Government must be, I maintain, to create a proprietary right of this description in all forest land, by making them either Government or Communal reserves. (The latter has been provided for in the new Forest Bill.) When this has been done, there can be no question of inflicting a hardship on the villagers in the vicinity of the forests, who will have their own communal lands; and only the traders and those who have the advantage of residing in the rich paddy-plains, or near the chief arteries of trade, must buy either from Government or the proprietors of communal forests.

The extension of permanent cultivation can be provided for in the communal forests by allowing the proprietors to clear—up to a certain limit without hindrance, and thus provide for the growth of their villages; and in Government reserves, by setting apart certain areas which under certain conditions may be granted to new settlers.

This of course applies only to settlers who intend to take to permanent cultivation.

To encourage the immigration of a semi-nomadic *toungya*-cutting population is mischievous: they destroy the forest without clearing it, and only create an inferior class of jungle where valuable forests might grow. Moreover, these people are almost totally occupied with their own cultivation, which requires much more time and labour than the cultivation in the plains, and are therefore of a but limited value as a labouring class. They have but few wants and less money, and do not therefore benefit the general trade to any appreciable extent.

They only become of importance when they come into contact with the Forest Department or the timber-traders.

But even if my views regarding the creation of proprietary rights in all forest land are accepted—which they ultimately must be, as they are no theoretical fabrication, but the forest history of every country during its growth of civilization—it will take years and years before such plan can be elaborated throughout the province, and in the meantime we must have some system of levying a legitimate revenue on the produce of the as yet unprotected forests, and of checking their deterioration which must inevitably follow a free and indiscriminate felling of any tree.

3. It was for this purpose that we reserved Teak, Thitka and Thitkadoe, and that notifications Nos. 33 and 34 of 1876 were issued, reserving the 12 species of trees enumerated therein.

I have prefaced the following interrogatories with my views on the creation of reserves, as I feel certain that facts brought out in the reports from the different divisions will tend to prove the advisability that such steps should be taken.

The question is, how far has the system inaugurated by notifications Nos. 33 and 34 of 1876 answered its purpose, where lie its defects, and is it desirable to maintain it in its present form, to alter it, to contract it, to expand it, or to replace it by a more rational proceeding?

4.—*a*. In the first instance, the working of the permit system during the last season must have supplied every Divisional Officer with more or less reliable statistics with regard to the amount of timber extracted of the reserved species, as well as of other forest produce where a revenue and check station has been established.

The result of the statistics obtained in your division, I request will form the first portion of your report. They must be arranged under forms A., B., C., and D., and under sub-headings with regard to the 12 different species, and also with reference to the line of export, *viz.*—

RANGOON DIVISION.

Via Pegu Choung—

(A.) Permits.				Logs.
1.—Thingan	...	...	...	,,
2.—Thitsee	...	...	...	,,
3.—Koko	....	...	...	,,
4.—Pynkadoe	...	....	....	,,
5.—Padouk	....	....	....	,,
6.—Anan	....	....	....	,,
7.—Engyin	...	....	....	,,
8.—Theya	...	....	....	,,
9.—Eng	...	....	....	,,
10.—Pymmah	...	....	....	,,
11.—Kanyin	....	....	....	,,
12.—Shah	...	....	....	,,

Via Okkan Choung—

(B.) Permits				
1.—Thingan	...	....	....	,,
2.—&c., &c.	...	....	....	,,

(*b.*) Has forest produce of the reserved kinds been extracted without permits? If so, has this been done in ignorance, or with a view to defraud?

(*c.*) Have free permits been made use of for the extraction of wood for trading purposes? Can you show proofs for this, or is it merely your opinion?

(*d.*) Has the granting of free permits been confined to the inhabitants of villages in the vicinity of forests, who actually required the timber for their own agricultural and domestic wants?

What is your interpretation of "villages in the vicinity of forests," and what in your experience has been that of the District Officers?

(*e.*) Do the holders of free permits in your division extract the wood themselves, or do they employ professional wood-cutters?

(*f.*) How has the trade in timber been affected in your district by the introduction of the system?

(*g.*) Have the notifications modified to any extent timber-consuming industries, such as cutch-boiling, extraction of oils, charcoal-burning, or lime-burning?

(*h.*) Are the prices (arbitrarily) fixed by the notification too high, too low, or are they disproportionate one to another, and should they be made to vary with the locality? State your opinion how they should be modified,

(*i.*) How does the system of levying the price of or duty on timber by revenue-stations work?

What system would you recommend of levying the duty?

(*k.*) What do you consider the best method for levying duty on—

1.—Rosin, Wood-oil, and Thitsee,

2.—Cutch,

3—Charcoal?

(*l.*) What is your opinion as regards the list of reserved species? Is there a considerable trade in your division in any timber not reserved? If so, in what species? Would it be advisable to leave out some of the species now reserved and substitute others?

(*m.*) In conclusion, I beg to be supplied with a report on the trade in timber and other forest produce in your division. Is the trade in the hands of professional timber-traders? Who are these men, and where do they live? Are they cultivators at the same time?

Whom do they employ, and what is their system of extraction, transport, and sale? Under this latter heading, I request you will specially note your experience as regards the trade in bamboos, firewood, and charcoal burned from unreserved wood.

From the Commissioner of the Pegu Division to the Secretary to the Chief Commissioner, British Burma,—No. 520-85, dated the 25th May 1877.

WITH reference to your No. 59-16, dated 24th February last, forwarding a circular received from the Additional Conservator of Forests, I have the honour to forward herewith the answers to the questions contained in that circular from the Deputy Commissioners, of Bassein, Henzada, Prome, and Thayetmyo. The answers from Rangoon have not yet been received, and as, owing to the change in Deputy Commissioners, there will probably be some delay in the receipt of the replies from that district, I forward those which have been received.

Questions put by the Additional Conservator of Forests in his Circular No. 2032-530, dated 29th January 1877, and the Deputy Commissioners' replies thereto.

QUESTIONS.

(*a.*) In the first instance, the working of the permit system during the last season must have supplied every Divisional Officer with more or less reliable statistics with regard to the amount of timber extracted of the reserved species, as well as of other forest produce, where a revenue and check station has been established.

The result of the statistics obtained in your division I request will form the first portion of your report. They must be arranged under Forms A., B., C., and D., and under sub-headings with regard to the 12 different species, and also with reference to the line of export, *viz:*—

RANGOON DIVISION.

	Logs.
Viâ Pegu Choung—	
(A). Permits.	
1.—Thingan ...	...
2.—Thitsee ...	...
3.—Koko ...	...
4.—Pynkadoe ...	...
6.—Anan ...	...
7.—Engyin ...	...
8.—Theya ...	...
9.—Eng ...	...
10.—Pymmah ...	...
11.—Kanyin ...	...
12.—Shah ...	...
Viâ Okkan Choung—	
1.—Thingan ...	...
2.—&c., &c. ...	...

ANSWERS.

Deputy Commissioner, Bassein.—The rules first came into force in this district on the 1st July 1876, and since that date the following permits have been issued:—

Bassein Deputy Commissioner's Office.	Free permits for removal ...	72
	Trade permits	22
	Free permits, domestic... ...	51
Ngapootau—Free permits, domestic ...		53
Thaboung ditto ...		...
Ngathinegyoung ditto ...		181
Laymyethna ditto ...		...

and the amount of timber covered by those passes has been—

	Pynkadoe.	Kaabit.	Thingan.	Koko.	In.	Shah.	Pyemmah.	Kanyin.	Thinkadoe.
Trade permits ...	226	215	8	...	...	...	24	6	4
Domestic ditto ...	5,059	361	12	...	111	...	749	15	22
Free permits for removal ...	2,255	2,343	...	...	...	...	307	55	26

QUESTIONS. ANSWERS.

Thaboung and Laymyethna, not included in the above, will be forwarded shortly. The right to collect forest produce has also been sold by me as under :—

	Permits.	Revenue.
For charcoal ...	... 2	Rs. 104
„ wood-oil ...	... 8	„ 160

The prices given in the first year are naturally very small, as the people were unable to form any estimate as to the probable outturn of each circle. Of the quantity of timber brought to the revenue station I can form no idea, as these stations are entirely in the hands of the Forest Department.

Deputy Commissioner, Prome.—The working of the permit system exhibits the following results as regards the amount of timber of the reserved species which has been extracted :—

	A.—Free permit.	B.—Trade permit.	C.—Free trading.	D.—Forest produce.
Koko	...	...	18	2,496 cauldrons up to date for working catch.
Pynkadoe ...	314	...	50	
Thitya, Engyin ...	127	50	155	
Pynkadoe, Thitya Engyin	112	...	...	
Padouk	...	...	158	
Shah	66	...	4	
Shah, Eng... ...	20	...	...	
Shah, Pynkadoe ...	289	...	...	
Eng, Padouk ...	280	176	364	
Thitya, Pynkadoe ...	53	...	...	
Pynkadoe, Thitya, Engyin, Pymmah, ...	140	3,000	...	
Shah, Pynkadoe, Thitya, Engyin	188	...	...	
Thitya, Eng, Pynkadoe	134	...	192	
Eng, Thitya, Pynkadoe, Engyin ...	853	...	150	
Total ...	2,576	3,226	1,086	

These results prove nothing, as far as my experience goes, as I have no standard of comparison to go by; nor can I imagine that the Forest Department can draw sound conclusions without having at least the figures of two years for comparison.

QUESTIONS. ANSWERS.

Deputy Commissioner, Thayetmyo.

Result of the working of the Permit System in the Thayetmyo District from September 1876 to 31st March 1877.

No.	Description of timber.	Permit A.	Permit B.		Permit C.	Permit D.	
		Number of trees granted.	Number of trees granted.	Revenue realized.	Number of trees granted.	Number of permits.	Revenue realized.
				Rs. A. P.			Rs. A. P.
1	Thingan	..	..	...	..		
2	Thitsee	..	..	..	..		
3	Koko	4	1	0 8 0	..		
4	Pyinkadoe	1,019	56	29 0 0	..		
5	Padouk	12	17	8 8 0	..	113	60 0 0
6	Anan	..	..	..	..		
7	Eagyin	2,374	179	89 8 0	..		
8	Theya	1,333	59	29 8 0	..		
9	Eng	148	3,323	830 12 0	..		
10	Pyinmah	43	..	..	..		
11	Kanyin	..	..	..	..		
12	Shah	..	1,691	532 8 0	50,070		
	Total	4,933	5,328	1,520 4 0	50,070	113	60 0 0

For trees (Shah, cutch) already felled, permit forms C. were granted for 50,070 trees; but not half of that number were really removed off the place they lay; and subsequent to January 1877, when permit C. became obsolete, those trees not so removed were allowed to be utilized in cooking cutch, at Rs. 5 for 30 trees. This arrangement was admissible under the rules, the trees having already been felled, so that stumbling block, the felling-rate, did not, as in the case of standing timber, prevent their use.

For domestic and agricultural use, &c., free permits (A.) were granted for 4,933 trees, whilst under trade B. permits, 5,328 trees were granted, and realized Rs. 1,520-4; and 113 permits for extrac-

QUESTIONS. ANSWERS.

tion of minor forest produce brought in Rs. 60,—a total revenue of Rs. 1,580-4 in the six months.

(*b.*) Has forest produce of the reserved kinds been extracted without permits? If so, has this been done in ignorance, or with a view to defraud?

Deputy Commissioner, Bassein.—It may be that forest produce has been extracted without permits; but probably if this is the case, it has been from ignorance in most cases, though I have no doubt there are plenty of people quite ready to do so with intent to defraud if they can only get an opportunity. These however, are matters which will come more under the knowledge of the Forest Officer.

Extra Assistant Commissioner, Bassein.—As far as the Ngathinegyoung division is concerned, it has not come to my knowledge that any of the reserved kinds of timber have been cut without permits.

Deputy Commissioner, Henzada.—Forest produce of the reserved kinds has not been extracted without permits.

Assistant Commissioner, Henzada.—I do not think so: certainly not with a view to defraud. A number of new houses are being built out of the reserved kinds of timber without permits having been taken out; but I have in every case been told that the wood was cut and seasoned before the permit system was introduced. I have no reason to doubt this assertion. The full effects of the permit system will not be felt for two or three years.

Deputy Commissioner, Prome.—A good deal of forest produce of the reserved kinds has been extracted without permits.

As a general rule, this was not done with a view to defraud,—two cases in the Padoung sub-division being the only exception to this rule.

Deputy Commissioner, Thayetmyo.—No instance of such has been brought to my notice.

(*c.*) Have free permits been made use of for the extraction of wood for trading purposes?

Can you show proofs for this, or is it merely your opinion?

Deputy Commissioner, Bassein.—Free permits have undoubtedly been used in the Ngathinegyoung sub-division for the extraction of wood for trading purposes, more especially in the manufacture of boats. This was due partly to a misapprehension of the rules, and partly to the fact that trade permits can only be granted by the Deputy Commissioner. I do not see why trade permits should not be granted by those officers whom the Deputy Commissioner may appoint. The more facility there is given to persons to take out trade permits, the less likelihood will there be of evasion.

Extra Assistant Commissioner, Bassein.—I cannot show actual proofs, but it is my

QUESTIONS.

ANSWERS.

opinion that free permits have been made use of for trading purposes, as so many applications have been made by regular boat-builders, who have taken out permits for the timber ostensibly to make boats for their own use, but who most probably were building boats for sale. It is my opinion that fewer applications for free permits would have been made had the applicants been able to obtain trading permits in Ngathinegyoung. People would rather pay the duty and have done with the matter, but they do not are to go such a long distance as Bassein to get a trade permit; consequently, they apply for free permits in order to get a permission of some kind to extract the timber they want. After getting this, they employ the professional wood-cutters in the forest.

Deputy Commissioner, Henzada.—I am not aware that free permits have been made use of for cutting timber for trading purposes.

Assistant Commissioner, Henzada.—I think it extremely unlikely. I can show no proofs. It is not the business of District Officers to collect them. If the Forest Officers have been unable to detect any cases of fraud after a year's trial, it shows either that fraud is not practised, or that the machinery of the department for detecting it is extremely inadequate. In the latter case, the permit rules should not, I submit, have been promulgated. I have, however, reason to believe that the system has produced such an effect on the people that they would rather go to inferior kinds of timber for their houses in most cases than ask for a pass. This is very much in accordance with their character,—much more so than that they should take advantage of a free pass for trading purposes.

Deputy Commissioner, Prome.—I have no reason to suppose that timber extracted under free permits has been used for trading purposes.

Deputy Commissioner, Thayetmyo.—None; and no complaints of such have been made by the Forest Department to the District Officers.

(*d.*) Has the granting of free permits been confined to the inhabitants of villages in the vicinity of forest who actually required the timber for their own agricultural and domestic wants? What is your interpretation of "villages in the vicinity of forests;" and what in your experience has been that of the District Officers?

Deputy Commissioner, Bassein.—The granting of free permits has not been confined to the inhabitants of villages in the vicinity of forests; but orders have since been issued on this point. My opinion is that this rule should apply only to those persons who actually live, as it were, *in situ*, and who go and cut down trees and drag the same to build their own houses. Many people, however, fancy that they can come from any part of the district and get permits for wood wherewith to build their houses, and employ wood-cutters to cut for them. Were such an interpretation of the

QUESTIONS. ANSWERS.

rules however admitted, there would be an end to all trade permits.

Extra Assistant Commissioner, Bassein.—Up to a recent date the granting of free permits has not been confined to the inhabitants of villages in the vicinity of the forests.

I should consider the term "villages in the vicinity of the forests" to include those situated nearest to any tract of forest, where there are any, within about five miles or so of the ordinary limits of such tract.

Deputy Commissioner, Henzada.—The granting of free permits has not always been confined to the inhabitants of villages in the vicinity of forests who actually require the timber for their own agricultural and domestic wants. A permit for 160 logs was granted to a missionary lady, and one for 30 logs to a Deputy Commissioner to build a house for himself. A person living in the vicinity of a forest may be a person living within five or 10 miles of the forest.

Assistant Commissioner, Henzada.—This is rather a comprehensive question, and has partly been answered above. I have already implied that the passes have been taken out (when at all) by persons who really wanted the timber for domestic purposes. My interpretation of "villages in the vicinity of forests" is villages which habitually use any particular forest for the extraction of timber. The distance, I believe, rarely exceeds 20 miles.

Deputy Commissioner, Prome.—Yes; "villages in the vicinity of forests" is taken to mean villages so near forests as to make it convenient for the villagers to resort to them, or villages which (irrespective of distance) depend on certain forests for wood for house-building, agricultural, and domestic wants.

Deputy Commissioner, Thayetmyo.—Yes; confined to the inhabitants of towns and villages, &c., &c., when the forest is situated within their own circle or township.

(*e.*) Do the holders of free permits in your division extract the wood themselves, or do they employ professional wood-cutters?

Deputy Commissioner, Bassein.—As stated above, most of those persons who have been allowed free permits have employed others, and as a rule professional cutters are employed.

Extra Assistant Commissioner, Bassein.—I believe that in nearly every case the holders of free permits in this division employ professional wood-cutters to cut the timber for them.

Deputy Commissioner, Henzada.—The holders of the permits sometimes extract the wood themselves: sometimes they employ coolies to do it at so much per tree.

QUESTIONS.

ANSWERS.

Assistant Commissioner, Henzada.—Sometimes they cut the wood themselves. There are, I believe, no professional wood-cutters; but numbers of people would cut down a tree if paid from annas four to eight for doing so.

Deputy Commissioner, Prome.—Holders of free permits generally themselves extract the timber, but often employ coolies for the actual wood-cutting.

Deputy Commissioner, Thayetmyo.—Themselves or family. Free permits not granted when professional (or contractory) wood-cutters are employed.

(*f.*) How has the trade in timber been affected in your district by the introduction of the system?

Deputy Commissioner, Bassein.—The price of iron-wood has been considerably raised lately, but not that of Kashit. I do not think, however, that the trade in timber has in any way diminished. The rise in the price of Pynkadoe must be in some measure due to increased difficulty in extracting it, owing to the easier localities being worked out. Every facility should be given to traders for paying the duty and passing the timber. If there be any trouble in getting passes or removing timber, the trade will either diminish or rules be evaded. If a proper staff, however, be kept up, and proper precautions be taken to mark timber, there ought not to be any difficulty. Hammers should be issued and registered, and all timber marked, free permits being reduced to a minimum. All unmarked timber being then made liable to confiscation, the marked timber can easily be checked. Free timber might be marked free by the Forest Goungs on production of the permit. There is a great difficulty in distinguishing between timber brought from reserved forests and that which is unreserved. Either all must be reserved, or timber from unreserved forests inspected and marked by the Forest Goungs with a hammer.

Extra Assistant Commissioner, Bassein.—Judging from enquiries here and there, the quantity of timber brought into the market, especially Pynkadoe, is much the same as it was before the introduction of the new system; and the trade in timber is so far affected by it that the value of timber has been increased,—an effect which may therefore be considered beneficial to the interests of traders.

Deputy Commissioner, Henzada.—There was very little trade in timber hitherto, but it has for the present almost ceased.

QUESTIONS.

ANSWERS.

Assistant Commissioner, Henzada.—I believe the trade in timber has never been very great in most parts of the sub-division. For instance, there are but one or two traders in the rather populous parts about Leppadan. One of these told me he had given up the trade since the permit-system was introduced.

Deputy Commissioner, Prome.—The Assistant Commissioner of Padoung reports that "the trade in timber has been affected considerably by the rules. It was never great in Padoung, but there has been I may almost say a total cessation of trade in the protected species."

"There is no timber trade in Poungday" reports the Assistant Commissioner of that sub-division. As regards Prome itself, I find that the supply, the demand, and the price of timber have increased. As the demand for the Railway, as well as for house-building purposes, has been abnormal, it is very questionable whether the trade has really been affected by the new system, though of course those who pay for permits add this on to their other charges, and ask more for their timber.

Deputy Commissioner, Thayetmyo.—The trade in timber remains the same, but people are naturally dissatisfied by the introduction of the permit system. Time of course will cure this.

(*g.*) Have the notifications modified to any extent timber-consuming industries, such as cutch-boiling, extraction of oils, charcoal-burning, or lime-burning ?

Deputy Commissioner, Bassein.—I cannot tell yet whether the sale of the right to collect charcoal or oil will make any difference in the trade, nor can I find that it has at present.

Deputy Commissioner, Henzada.—The timber-consuming industries named have never existed to a large extent in this district. There were only 53 pans used in boiling cutch.

Assistant Commissioner, Henzada.—Not to any great extent at present. The industries appear to be too scanty and isolated. The rules with regard to them are very vague, and depend much on the action taken by the Deputy Commissioner.

Deputy Commissioner, Prome.—Judging by the reports received, the notifications have not modified to any extent, if at all, timber-consuming industries.

Deputy Commissioner Thayetmyo.—Considerably; numbers have gone across the frontier, and cooked cutch there instead of near their homes. Lime-burning is affected by the non-free use of the better qualities of timber as fuel.

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(*h*) Are the prices arbitrarily fixed by the notification too high, too low; or are they disproportionate one to another, and should they be made to vary with the locality? State your opinion how should they be modified?

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Deputy Commissioner, Bassein.—As I do not clearly understand the principle on which the system is based—that is to say I do not understand why a fee should be levied on the trees by the Deputy Commissioner, and a duty on the timber passed at a revenue-station by the Forest Department—I do not feel that I am in a position to state whether the prices fixed are too high or too low. I do not understand the object of levying dues in two places. If the object were to levy duty on wood exported to other parts and to free home consumption, there might be some reason in the present system, but as the revenue-stations are fixed at Bassein and Ngathinegyoung this is evidently not the intention.

Deputy Commissioner, Henzada.—I am not prepared to answer this question.

Assistant Commissioner, Henzada.—The only prices fixed by the notification are those on trees. Provided no timber stations are made or notified, I do not think the rates too high. Annas four or annas eight a log seems to me to be quite enough to levy, until the department sees its way to a more definite system than they have at present decided on. The permit system being clearly a mere feeler, the rates on all forest produce should at first be made as light as possible.

Deputy Commissioner, Prome.—The experience of a year does not justify me in suggesting any modification of the rates.

Deputy Commissioner, Thayetmyo.—Felling-rate on "cutch" quite prohibitary. There is no timber trade in cutch, and should be excluded fromr the reserved list altogether, and the tree protected under rules special to itself. The felling-rate on Theya might be the same as on Pymmah.

(*i*) How does the system of levying the price of, or duty on, timber by revenue-stations work? What system would you recommend of levying the duty?

Deputy Commissioner, Bassein.—For my own part I am of opinion that all reserved timber used by traders, *i.e.*, what passes from one hand to another by sale after felling, should be subject to a duty levied equally on all timber in proportion to its market value, as calculated by its quality and abundance or scarcity; and I am of opinion that this duty should be levied, once and for all, previous to felling, whether it be by the civil authorities or the Forest Department.

It is impossible to levy the duty by stations without either harassing the

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traders, or allowing a large quantity of wood to escape, for it is impossible to keep up duty stations in every small mountain stream, and it would be very hard on the traders to make them bring their timber to places off the route by which it usually travels. At present duty has in some intances been levied on timber not brought to Bassein by request of the traders, but I am not certain that the practice was legal or intended by the rules. If duty is to be levied only on timber leaving the district, it will be necessary to have stations on the routes of exit and nowhere else; but, as stated above, I do not see any reason in the idea, for I can see no reason why, if Pynkadoe is exported from Bassein to Thonkwa, the people of Thonkwa should pay more for it than the people of Bassein. To raise the duty prior to felling would, I think, make the traders more careful not to fell wood to waste, and ensure every log cut being brought to market. In short, I would do away with duty, and make the rate on logs a little less than the duty now levied on them at revenue-stations.

Deputy Commissioner, Henzada.—I am not acquainted with the working of the revenue-stations. The system on which I should levy the duty on resin, wood-oil, and Thitsee would be to charge a tax of a fixed sum on each person taking out a permit: on cutch so much per pan: on charcoal so much per 100 baskets passed out at the revenue-station might be levied.

Deputy Commissioner, Prome.—The only revenue-station in the district is at Prome. I have no practical knowledge of its working. As this information will of course be given in detail by the Assistant Conservator, additional notice does not appear to be required from me. Mr. Midwinter thinks a revenue-station at Wetpoke would be desirable to give the inhabitants an opportunity of purchasing teak, though he is sceptical of its utility in reference to other kinds of reserved timber.

Deputy Commissioner, Thayetmyo.—There is no timber-station in this district, and quantities of converted timber escape all duty but not felling-tax. A revenue-station should be established at Kama for this district. The rate of duty payable per tree should not be universal

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but dependant on place of extraction and subsequent sale. Rupees 4-8 per ton may be fair at Rangoon, but not at Prome: it may be too high at Rangoon, seeing the extra expense and distance the timber has to be taken, or it may be too little when the advantage of a better market is taken into consideration, and under such circumstances a middle place like Henzada should be arranged for. I think a nominal duty should be placed on the timber in the first instance to be levied at a station in the district the timber is felled in, and subsequently a surcharge be made at the place of disposal in conformity with the local market-rate of timber, permit system, and pass-station.

(*k*) What do you consider the best method for levying duty on—
(1). Resin, wood-oil, and Thitsee.
(2). Cutch.
(3). Charcoal.

Deputy Commissioner, Bassein.—For the levy of duty on wood-oil and charcoal I think the present system the best.

Assistant Commissioner, Henzada.—In each case the duty should, as far as I am competent to judge, be per tree or log, as the case may be, except in the case of cutch, which may perhaps better be assessed per pan.

Deputy Commissioner, Prome.—In my opinion, the best method for levying duty on—
(1).—Resin, wood-oil, and Thitsee, is by farming the right of extraction within defined limits.
(2).—Cutch, by taxing each cauldron.
(3).—Charcoal, by farming the right of extraction within certain limits.

Hereafter, if the demand for charcoal increases, perhaps taxing by the kiln may be preferable.

Deputy Commissioner, Thayetmyo—1 and 2.—Farm out the monopoly in each revenue circle, disposing of same by auction annually.

3.—Permits.

(*l*) . What is your opinion as regards the list of reserved species?

Is there a considerable trade in your division in any timber not reserved? If so, in what species? Would it be advisable to leave out some of the species now reserved, and substitute others?

Deputy Commissioner, Bassein.—The principal trade in this disrict is in Pynkadoe, Kashit, Kyoungdouk, and Kyumbo; but there are other woods which might be included in the list. On this point the Forest Officer will be the best authority. I do not know what are the scientific names of three latter; but Kashit is the same as Thityah.

Deputy Commissioner, Henzada.—Regarding the list of reserved timber, I think it is complete. There are several species of timber equal in quality among the unreserved, but they occur in small quantities, and are not worth preserving.

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Assistant Commissioner, Henzada.—That it is quite extensive enough. The list of reserved trees is, I think, a fairly good one from a Forest Officer's point of view. They will (I have no reason to doubt) be able in a few years, by the mere continuance of the system, to congratulate themselves either on having succeeded in reducing the style of dwellings for the people, or in levying a very considerable house-tax through the length and breadth of the land. Whether this will be an advanage, it is for other people to judge. There is no doubt that the comfort and durability of the ordinary Burman house has increased considerably during British occupation. Oppression and ill usage used, under their own authorities, to drive them practically to carry their houses on their backs, and their villages used to disappear and revive with marvellous celerity. Such a thing as a permanent residence was unknown. The Burmese Government, moreover, used to employ their Forest Officers, called Thit Goungs, as well as ourselves, and these officials had general control over forest produce, chiefly bees'-wax, and used to levy rates of from four annas to eight annas per tree on at least the more valuable timber. Above all, it seems that they exercised an important influence in keeping out fires. In our time things rapidly changed, cultivation increased, game was driven away, the principle of the "damaoo," or of allowing every man to cut where he chose, was tacitly recognized, fires were left to their own control, and, while the condition of the people's houses rapidly improved, the forests seem to have suffered to a grave extent, the waste being occasioned at least as much from recklessness as from any more legitimate cause. If, for instance, rank grass and stunted trees have replaced luxuriant forests on the banks of the Myitmah-kah, as it seems they have done for a considerable distance, the matter is in itself one for regret, and all the more as if the fact is due as much to a careless use of fire, as to the rising prosperity of the people. The Forest Department might do a valuable service to the people themselves, as well as make a profit for Government, if they were ready to enter into an intelligent system of conservancy. The process of repairing waste, and of restoring the forests to some extent to their former condition, should be gradual, and to be effectual needs not so much a system of stringent rules, as the employment of a numerous and vigilant staff.

Deputy Commissioner, Prome.—Eng has been struck out of the list of reserved woods as regards the Shwedoung township, because its reservation gravely affected the interests of the molasses-makers. The Assistant Commissioner of Poungday recommends Eng to be struck out, so as "to encourage the people to build better houses."

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(*m*). In conclusion, I beg to be supplied with a report on the trade in timber and other forest produce in your division. Is the trade in the hands of professional timber-traders? Who are these men, and where do they live? Are they cultivators at the same time? Whom do they employ, and what is their system of extraction, transport, and sale? Under this latter heading, I request you will specially note your experience as regards the trade in bamboos, firewood, and charcoal burned from unreserved wood.

ANSWERS.

I would retain the present list as it is for a while, making modifications locally if found necessary, as was the case at Shwe-doung.

Deputy Commissioner, Thayetmyo.—Eng being so plenteous, and so generally used, should be excluded. Toukkyan might be substituted. The timber trade is not considerable in this district.

Deputy Commissioner, Bassein.—Most of the timber used in this district is felled and dragged by Karens who have elephants, who reside in the Myittayah, Maizalee, Kyouk-choung-gyee, and Thaboung circles, and is sold to traders in Kyouk-choung-gyee, Bassein, and other villages along the Ngawoon river, to be cut up in Ngathinegyoung and the neighbourhood. It is used extensively for the manufacture of boats of four or five hundred or more baskets burden.

One of the great difficulties in working these rules is, that the actual fellers will not come in and get a permit, but get it in the name of the trader who lives out of the forest, and cannot be found when wanted, so that it is impossible almost for the Forest Officer to check the passes. The only way I see out of this difficulty is to insist on all timber being passed and compared with the permits at stations on each hill stream, and then marked with a letter or mark, with the number of logs covered by the permit. At present, however, the rules make no mention of the way in which trade permits are to be passed. Again, the rules are carelessly worded. Rule II. (1) of notification 34 of 8th March says "free permits must be returned after the expiration;" but this is very indefinite, and allows of a permit being kept for ever. Rule II. (2), however, is a little clearer, and directs that trade permits "must be returned *on* expiration." It would, however, in each case be better to give a certain day, and direct that they be returned "*on or before*," failing which a fine may be inflicted. Rule II. (4) directs that "free trading" permits must be registered at a revenue-station; but there is nothing to compel trade permits, or timber covered by them, being brought to a revenue-station.

Deputy Commissioner, Henzada.—In conclusion, I am not aware of any

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considerable trade in timber from any part of this district, and I am not able to report upon it at such short notice, not having yet received any information from the Sub-divisional Officers.

Assistant Commissioner, Henzada.—The trade, such as it is, is in the hands of professional traders, who are found in all parts scattered here and there, but are principally congregated at Talophman, where they have the threefold advantage of living outside Government forests, of having a considerable amount of valuable timber in their hands, and, above all, of being near the river. The Talophman traders do not cultivate, but in other parts they sometimes do. Many of them own elephants and buffaloes for dragging timber, and they either saw it up themselves on the river bank, or sell it to others who do as before stated. There are, it is believed, no professional wood-cutters. There is not a large trade in bamboos. These are generally extracted after the paddy season is over by persons owning bullocks and buffaloes, who turn their animals to a useful purpose in bringing down bamboos when they have no other employment for them. The trade in firewood is in the same hands: a man will take his cart to the nearest jungle, and cut and cart the timber to his village. A cart load sells generally for annas eight, annas four being for cutting, and annas four for cart-hire. The people are rapidly cutting themselves out of bamboos, and have to go further and further afield. The matter is one which deserves the greatest consideration, but needs space for adequate discussion. It is also perhaps foreign to the subject of this report.

Deputy Commissioner, Prome.—Having no statistics to guide me, and having been unable to elicit trusworthy information as to the capacity, resources, and extent of the timber trade as compared with former years, I regret I am not in a position to submit a satisfactory report thereon.

In Prome only can the trade be said to be in the hands of professional timber-traders. They live in the town, and do not cultivate. As a general rule, these traders have the timber felled in the forests floated or otherwise conveyed to Prome, and disposed of to sawyers, who make a profit thereon by converting the logs into planks, rafters, &c., for house-building and other purposes.

The following are the principal kinds of timber used: *Teak, Theya, Pynkadoe, Eng*, and *Engyin*.

The Railway has given a great impetus to the trade. An increase in the number of new substantial houses in Prome has also had the same effect.

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There is a considerable trade in bamboos on the river-board, those on the Padoung side being of excellent size and quality, the prices varying according to the season and the market demand from Re. 1-8 to Rs. 3 per hundred.

In Prome and in parts of the district where molasses is made, there is a brisk trade in firewood (at prices of from Re. 1 to Re. 1-8 a hundred billets). This will also be developed in other places to meet the Railway demand. The charcoal trade is at present insignificant. This commodity can be had in Prome at a price of eight to 10 annas a coolie load. The new rules have had no effect on these industries.

Conclusion.—It is premature to decide positively as to how the new rules work : at first they created quite a consternation. This was allayed by prompt explanation, and they appear to be working smoothly now.

Deputy Commissioner, Thayetmyo.—The trade in timber, such as exists in this district, is principally in the hands of professional timber-traders, who live out of the district, and send men and animals to extract the timber. Cultivators in their dull season carry on an insignificant trade in house-posts, which they cut and sell to the people requiring them. Villagers in the interior fell bamboos in like manner. Money advances are often made to them. This trade in bamboos should not be interfered with or taxed in any way.

From the Conservator of Forests, British Burma, to the Secretary to the Chief Commissioner, British Burma, —No. 107-28, dated the 1st May 1877.

I HAVE now the honour to submit the report called for in your No. 61-16, dated 24th February 1877. Information I have been given to understand has been submitted regarding the Tavoy and Mergui districts by the Deputy Commissioners of those districts.

2. I may also mention that, prior to the receipt of your letter, inquiries had already been instituted by me, with a view to addressing you on the subject of revising the rules published in local Government notifications Nos. 33 and 34 of 8th March 1876.

3. Being under the impression that the rates of payment had been fixed with due regard to the market-value of the timber of each description, I made a reference on the subject, and then ascertained that the rates had been arbitrarily fixed, and without reference to selling prices.

4. The Deputy Commissioner of Mergui early drew my attention to the undesirability of having considerable forest areas in his district excluded from the operation of the rules.

5. The absence of protective measures in the extraction of wood-oil from Kanyin trees also engaged my attention, and more subsequently it appeared to me very necessary in the reservation of valuable trees and legislating for the same, to deal separately with the Mergui and Tavoy districts, certain trees valuable in the northern part of the province being almost unknown in the south.

6. It was very evident also that a system of assessment based on a calculation of the cubical contents of timber was likely to prove very inconvenient and irksome to the larger portion of the people, such a method of assessment and the calculations involved in it being utterly unknown to them.

7. The above remarks serve to indicate in a general way the alterations and modifications that are needed in the rules, and hence it will be convenient to record my opinion on—

(1). The area subject to the rules.
(2). The list of reserved trees.
(3). The rates of payment.
(4). The system of collecting payment.
(5). Protective measures for preservation of Kanyin (wood-oil) trees.

I.—Area subject to the Rules.

8. The question is often asked why large areas were excluded when the limits of the Government forests were extended in notification No. 49 of 30th March 1876.

It will be useful therefore to note briefly the circumstances which led to such a course of action.

9. In 1865, with the promulgation of the Forest Rules based upon Act VII of 1865, certain areas were declared to be Government forests, their boundaries being set forth in Chapter I. of the rules.

10. At this time teak being the only species reserved, the boundaries were selected so as to exclude areas void of teak, and those that were then believed to be the less valuable teak localities, as well as some in which the license system had been introduced.

11. From time to time the attention of Government was drawn to the urgent necessity for protecting other valuable trees, but it was not until 1873 that the two varieties Thitka and Thitkadoe were reserved in notification No. 32 of 2nd June 1873.

12. In the following year the question of extending conservancy to the Mergui and Tavoy districts, and those west of the Irrawaddy river, as well as the Upper Salween forests, came under the consideration of Government. In the Mergui and Tavoy forests the extraction of Thingan and in the Shwe-gyeen district the destruction of Kanyin (wood-oil) trees were then attracting attention, while in the case of the Upper Salween forests it was believed that valuable teak localities needed protection against toungya cultivation.

13. It was also becoming evident that, unless additional areas were included within the limits of the Government forests, or areas subject to Act VII. of 1865, the notification relating to Thitka and Thitkadoe would prove almost inoperative, as by far the larger areas abounding in such trees remained unprotected.

14. After Commissioners of Divisions had been consulted, proposals were submitted in August 1873, which resulted in additional areas being declared subject to Act VII. of 1865 in notification No. 49 of 30th March 1876.

15. From the preceding remarks, it will have been seen that the selection of the additional areas had reference only to the protection of three kinds already reserved, *viz.*, Teak, Thitka and Thitkadoe, and of two kinds about to be reserved, *viz.*, Thingan and Kanyin (wood-oil) trees.

16. A little prior to the additional areas being notified, the local Government was pleased, in notification No. 33 of 8th March 1876, to add not only Thingan and Kanyin, but also 10 other different kinds of trees to the list of reserved trees.

It should not therefore occasion surprise if considerable areas are now found without the limits of the Government forests, although abounding in valuable trees of the reserved kinds. In fact, when so many additional kinds

were about to be reserved, the question of extending the limits of the Government forests should have been reconsidered.

17. The following are the limits within which some of the more important of these areas occur in the Tenasserim division :—

(1). The Yoonzaleen valley below Kadinetec.
(2). The Martaban range.
(3). The Salween west bank from opposite mouth of Thoungyeen river to the Kawpraing hill.
(4). The Thoungwine range from Moulmein to the Wagroo watershed.
(5). The high ground between the Attaran and Houndraw rivers above Meegalôon and Kyaikmyaw.

18. In Pegu considerable areas embracing more or less valuable localities will be found between the Irrawaddy and Hlyne or Meimakah rivers, in the more elevated portions of the Delta and lower portions of the Pegu and Pounglin valleys, as well as East Sittang watershed east and south of Sittang.

The chief objection to the exclusion of these and other areas is that they will be resorted to by timber-dealers to obtain timber free from payment.

This is already the case in parts of the Tenasserim division, and, as a matter of course, such localities will be threatened with denudation of the more valuable of the reserved kinds.

19. Another objection is the difficulty, if not impossiblity, of discriminating at the revenue stations between dutiable timber and that which is free from duty.

20. As the people are allowed the free use of nearly all the reserved woods, it is evident that the timber-dealers are the only people likely to be affected by extending the provisions of Act VII. of 1865 to such outlying areas.

21. The fact also should not be lost sight of, that the formation of district and village forests for the use of the people is a mere question of time.

Sooner or later this work will have to be taken in hand, and it will be an extremely unwise policy to abandon areas *to destruction which might eventually be deemed suitable sites for village forests and district forests.*

The simplest and most effectual plan appears to be that which was advocated by the Officiating Inspector-General of Forests in 1873, *viz.*, to declare the entire province subject to Act VII. of 1865.

22. There may be considerable areas near the sea-board destitute of what can at present be considered valuable forest; but it appears unnecessary to exclude them because the people remain unaffected by the Act, while at the same time no difficulty will be experienced should it be deemed desirable at any time to protect any of the jungles in the deltas of the larger rivers, where considerable supplies of timber for fencing purposes, rafters, and firewood are obtained.

If such a measure is disapproved of, the only alternative is of course to notify the boundaries of the separate outlying areas, information regarding which cannot be always readily or satisfactorily obtained, thereby necessitating modifications from time to time.

II.—The List of Reserved Trees.

23. Notification No. 33 of 8th March 1876 prohibits the unauthorized felling of 12 kinds of trees.

Of these, Shah (cutch) and Engyn are unknown in the Tavoy and Mergui districts.

Eng also is very scarce, if not unknown, in many parts.

In the place of these three kinds, it is desirable to protect—

1—Kanzaw,	3—Mhantin,
2—Karaway,	4—Koungmhoo,

in the Tavoy and Mergui districts. Koungmhoo is much more valuable for boat hulls than the two varieties of Thingan known as "Thingan-pway," or Magalay, and "Thingan-kyouk."

24. The Deputy Commissioner of Tavoy has, it is believed, recommended the reservation of "Magalay," being evidently unaware that it is a variety of Thingan. This however suggests the propriety of inserting the clause "*and all its varieties*" after the name "Thingan" in future notifications. The above remarks apply to the Tavoy and Mergui districts; and with reference to the remainder of the Tenasserim division, embracing the Amherst, Pahpoon, and Shwe-gyeen districts, I would recommend that Koungmhoo be added to the list of reserved trees.

25. In addition, it is a subject for consideration whether Thitka and Thitkadoe should not be again notified as reserved, and added to the list of trees about to be published.

The original notification—No. 32 of 2nd June 1873—relating to these two varieties can hardly be said to apply to the additional areas notified in notification No. 49 of 30th March 1876, as the Forest Rules which were framed for these additional areas (notification No. 50, dated 30th March 1876, makes no reference to Thitka and Thitkadoe in Rule VIII.).

The Deputy Commissioner of Mergui has in fact given it as his opinion that the felling of these two kinds must be considered as unrestricted, and that prosecutions for unauthorized felling would fail.

If this is a correct conclusion, it follows that Thitka and Thitkadoe are virtually unprotected throughout the entire area declared to be subject to Act VII. of 1865 in notification No. 49 of 30th March 1876.

26. Another subject for consideration is the limitation of free and trade permits to only those kinds of trees that are abundant and more in demand with the people, while the more rare kinds would be left with the Forest Department to deal with. The advantages of this latter measure are already apparent in the case of Padouk.

Not only is a steady source of revenue being opened up, but the felling of undersized trees is also guarded against, and the introduction of green timber into the market effectually checked. This has resulted from the refusal of the Deputy Conservator, Moulmein, to issue trade permits for such timber, there being a large stock of seasoned timber of this description in hand to meet both public requirements and the yearly indents of the Gun-carriage Department.

27. Under existing rules, however, trade permits can be issued by the civil authorities, and, advantage being taken of this by timber-dealers, an urgent reference was made on the subject recently, with a view to retain the extraction of this valuable timber entirely in the hands of the department.

28. The Deputy Conservator of Forests, Moulmein, urges the limitation of free and trade permits to the following five kinds—Thingan, Pymmah, Pynkadoe, Eng, and Koungmhoo—as being the kinds most in use with the people.

29. The statement appended to the Deputy Conservator's memorandum shows that very few permits have been issued for the remaining kinds of reserved trees, and consequently no hardship is likely to be involved in discontinuing the issue of permits for such trees.

30. By careful attention on the part of the Forest Department to seasoning and selection of sound timber only, there is a reasonable prospect of such a demand springing up for these several woods as will open up an additional source of revenue for Government; and it has further to be remembered that, for many years to come, the overworked condition of many of the Tenasserim teak localities will leave no other alternative but to supplement the forest revenue by the extraction of other woods.

The advantages of the measure are so apparent that I cannot but strongly commend it to the favourable consideration of the Chief Commissioner.

III.—Rates of payment.

31. Unless intended to be prohibitory, there can be no doubt that the rates of payment in the case of most woods should be considerably reduced. The only exceptions are woods extracted in the form of boat hulls—generally Thingan and Koungmhoo—which can well bear an *ad valorem* duty of 10 per cent.

The proportion between existing rates and market prices in the case of woods most in use are—

	Present rate.	Percentage of market price.
Thingan (two kinds, used for posts and planking); eight annas per tree, and Rs. 4-8 per ton	Rs. 5 per ton	30
Pynkadoe; eight annas per tree; three trees, Rs. 1-8; also per ton, Rs. 4-8	„ 6 „	57
Pymmah and Eng; four annas per tree; two trees, eight annas; and per ton, Rs. 2	„ 2-8 „	46

The two latter kinds only are assessed at four annas per tree and Rs. 2 per ton, equivalent to 46 per cent. of the market price.

The Deputy Conservator, Moulmein, considers one uniform rate of Rs. 2 per ton, inclusive of the fee paid on issue of permit, as quite sufficient.

This will represent about 43 per cent. of the market price, and appears a very suitable rate for all timber extracted under trade permits, except, as already mentioned, such as may be in the form of boat hulls.

In the case of the latter, the market price varies so much according to demand and freedom from defects, that I can advocate nothing but an *ad valorem* rate of duty; and this rate should not be less than 10 per cent., as exceedingly large profits are made out of boat hulls.

32. With reference to the present method of assessment, *viz.*, "according to the cubical contents," there can be no doubt that it is most unsuitable and inconvenient to the greater portion of the people dealing in timber. A calculation based on cubical contents simply means that the traders are at all times uncertain as to the amount which they have to pay, and look with mistrust on the rates demanded of them. What is needed is a system which is intelligible to the poorest Burman or Karen, and this would be fully met by what is known as the "running foot" system of assessment, which was introduced with so much success in all the later forest leases under the now obsolete system of forest permits.

There a fixed price for every foot in length, the price only varying according to girth; and hence a calculation of the amount due is within the capacity of the meanest coolie.

Mr. Slym has calculated the following rates as equivalent to Rs. 2 per ton :—

Running foot rate of assessment.

Logs *5 feet in girth* and under—one anna per running foot in length,
Logs *above 5 feet* in girth—one anna six pie per running foot in length,

and these rates might be adopted should the Chief Commissioner be pleased to sanction the proposed reduction.

IV.—The system of collecting payment.

33. At present payment is collected at the revenue-stations, and this answers well enough in the case of timber the destination of which admits of it being brought to a revenue-station. There is, however, a considerable quantity of timber of the reserved kinds which cannot be brought to any revenue-station whatever, and it is in respect of this timber that Mr. Slym proposes that payment in full should be levied before the timber leaves the forests; but in addition to this it will be necessary to provide for the examination and passing of the timber by either a forest subordinate or local revenue official, otherwise it will be difficult to check frauds.

Before, therefore, converting or disposing of the timber, the holders of the permits should be required to report the timber and obtain the signature of the nearest Government subordinate to the effect that the timber accords with the permit.

V.—Protective measures for the preservation of Kanyin (wood-oil) Trees.

34. The only Kanyin tracts which are at present leased out, or which admit of being leased out, for the collection of wood-oil are those in the Tavoy and Mergui districts.

From Mergui large quantities of the oil are exported to Rangoon and other ports, including Moulmein, where it successfully competes with, and shuts out of the market, the produce of the Attaran and Salween valleys.

The leases issued in the Tavoy district contain no provisions for the protection of the trees against excessive tapping and firing.

The Deputy Commissioner of Mergui appears to be of opinion that none are needed, it being to the interest of the lease-holders to preserve the trees. This may be the case where long leases are issued, but it certainly cannot be so where leases are put up yearly to public competition, and the successful individual finds it suits his ends to make as much out of the trees as possible.

35. Another matter for consideration in connection with the Kanyin or wood-oil trees is the utilization of wood-oil by the forest population in remote localities, where such produce has no value, and cannot have for many years any market-value.

Lately I addressed the Commissioner of Tenasserim on the subject of forming Kanyin circles within which the collection of wood-oil might be allowed, subject to certain conditions deemed necessary for the preservation of the trees.

Throughout the Attaran and greater part of the Salween forests the people continue to collect the oil for their own purposes chiefly; and if some protective measures are not enforced, the deterioration, if not destruction, of the more accessible Kanyin tracts may be expected.

36. My proposition, therefore, is, if the people in certain localities are to be allowed to use such produce for their own wants, to subject the same to some control. It may be possible to collect the oil over considerable areas for a small sum annually, but even then protective measures are necessary.

These measures should embrace such details as—

(1). Minimum standard girth of trees to be tapped.
(2). Maximum size of niches.
(3). Trees to be allowed to rest every other year.

(This latter measure is to counterbalance the injury caused by applying fire, without which, apparently, the oil cannot be readily obtained.)

37. To sum up my several proposals, I may thus briefly recapitulate them:—

I.—To extend the provisions of Act VII. of 1865 to the entire province, or to additional areas which should have been brought within the limits of the Government forests at the time when 12 additional kinds of trees were added to the list of reserved trees.

II (*a*).—To issue separate notifications for the Tavoy and Mergui districts, omitting Shah, Engyin, and Eng, and providing for the reservation of (1) Kanzaw, (2) Karaway, (3) Mhantin, (4) Koungmhoo, (5) Thitka, and (6) Thitkadoe, in addition to the following, which have already been notified as reserved:—

1.—Thingan.	5.—Padouk.
2.—Thitsee.	6.—Anan.
3.—Koko.	8.—Theya.
4.—Pynkadoe.	10.—Pymmah.
	11.—Kanyin.

(*b*). Also for the remainder of the Tenasserim Forest Division, embracing the Amherst, Thatone, and portion of Shwe-gyeen districts, to add Koungmhoo to the list of reserved trees.

(*c*). To limit the issue of trade and free permits to the reserved kinds most in use with the people, such as Thingan, Pynkadoe, Pymmah, Eng, and Koungmhoo.

III (*a*).—To reduce the rates, and adopt one uniform rate of Rs. 2 per ton, inclusive of amount paid on issue of permit.

(*b*.) Instead of assessment according to cubical contents, to have the "running foot" system of assessment, and charge one anna per running foot on logs five feet in girth and under, and one anna six pie per foot on all logs above five feet in girth.

(*c*). All timber extracted in the form of boat hulls to be subjected to an *ad valorem* duty of 10 per cent.

IV (*a*).—To enforce prepayment in full of rates before the timber is removed from the forests in the case of all timber not brought to a revenue-station.

(*b*). The said timber not to be converted until examined and reported upon, between the forests and final destination, by any subordinate of the Revenue or Forest Department.

V.—*Collection of Kanyin oil to be subjected to control for the preservation of the trees.*

38. In conclusion, I have also to mention that it is as yet too soon to judge of the general effects of the rules on the timber trade.

In the Tenasserim division, with the population so sparse, trade in woods other than teak can be carried on to a very limited extent only.

In the Tavoy district, a year or two must elapse before the effects on the timber trade can be ascertained.

This is owing to the fact of the notification regarding the 12 kinds of trees and the Permit Rules having been promulgated only at the latter end of October 1876.

The people were, however, quite aware of the intention of Government to reserve so many woods, and it is not surprising that Tavoy and many outlying places are now found to be stocked with timber sufficient for a whole year's supply.

Memorandum on the Revenue Notifications Nos. 33 and 34, dated 8th March 1876, by BERTHOLD RIBBENTROP, Esq., *Additional Conservator of Forests, British Burma.*

READ—

1.—Notification No. 33, dated 8th March 1876.
2.—Notification No. 34, dated 8th March 1876.
3.—Revenue notification No. 35, dated 3rd May 1877.

The attention of many officers of the Forest Department, especially of those living near centres of trade, had for years been drawn to the importance of the trade in timber other than teak, and in the numerous other products of the forests of British Burma. Fear was expressed, and most justly so, that the resources of the more valuable kinds of timber and other forest produce would become exhausted. It must be borne in mind that as a rule the different species of trees in the Burma forests are *not gregarious*, and therefore, when *one* species is more heavily worked than *another*, the result must be the reproduction of a forest of a *different* character in which this *same* species no longer holds the *same* proportion to the peuplement as it formerly did. In fact, this species disappears, and another less in demand takes its place.

2. As far back as 1873, the reservation of 20 species of trees in all Government forests was proposed in Mr. Baden-Powell's "Forest system of British Burma." At that time, however, it was the strongly expressed opinion of the officers of the Civil Department—an opinion shared by many members of the Forest Department—that the hardship inflicted by such a measure on the agricultural population of the province would be great and out of proportion to the benefit to be derived from the proposed reservation. It was the general impression, as may be gathered from the correspondence of that time, that as a rule the members of the agricultural community employed their time not occupied with cultivation as well as their cattle in the extraction of timber, bamboos, and other forest produce for their own domestic and agricultural requirements. It was acknowledged that Government had the right to all forest material within demarcated reserves, and that they might sell such produce to the best advantage; but it was argued that all forest produce outside such reserves should in all fairness be left to the working class—the agriculturists of the province—for their own requirements, "but not for their pecuniary profit." This opinion might have been defensible with some show of reason had sufficient forest reserves existed, or had it been possible to create them off-hand, and had the agriculturists really extracted the forest produce for nothing but their personal requirements.

3. At last in 1876, at a meeting consisting of the Inspector-General of Forests, the Secretary to the Chief Commissioner, the Deputy Commissioner of

Rangoon, and the Officiating Conservator of Forests, it was decided that a limited number of species of trees should be reserved under section 12 of the Forest Rules of 1865, and that a duty should be levied thereon. This proposal was sanctioned by the Chief Commissioner, and notifications Nos. 33 and 34 were issued reserving the following 12 species:—

(1).	Thingan.	(7).	Engyin.
(2).	Thitsee.	(8).	Theya.
(3).	Koko.	(9).	Eng.
(4).	Pynkadoe.	(10).	Pymmah.
(5).	Padouk.	(11).	Kanyin.
(6).	Anan.	(12).	Shah.

These notifications were, with some slight alterations, made applicable by force of the provisions of Rule VIII. of notification No. 50, dated 30th March 1876, to the forests declared Government forests under No. 49, dated 30th March 1876.

4. These notifications have now been more than a year in force, and sufficient experience has been gained to show how far the working of the system employed has answered expectation, in what it has been successful, and wherein it has failed.

5. It will be remembered that the extraction of the reserved kinds of wood was permitted under three classes of permits :—

(1). A. or free permits.
(2). B. or trading permits.
(3). C. or free trading permits.
(4). D. or permits for minor forest produce.

The following permits were issued during the year :—

Division.	A.	B.	C.
Prome	7,248	8,261	5,192
Tharrawaddy	4,261	325	2,010
Rangoon	2,788	9,780	18,921
Western	9,443	1,078	*5,148
Shwe-gyeen	2,805	85	3,802
Toungoo	13,600	555	2,969
Total	40,095	20,084	38,037*

* These though not revenue-yielding have been included in the permits for trade in the next table.

These figures however, as might have been expected during the first year's working of a new system, include but a portion of the whole outturn of reserved trees throughout the Pegu division.

Nevertheless they amount to 81,000 trees, to which must be added 300,000 cutch trees, felled under 2,022 cutch permits (D). in the Prome division, Prome Civil District, and 91,688 cutch trees in the Prome division, Thayetmyo Civil District, which also were used for cutch-boiling, but for which C. permits have been given by the Deputy Commissioner. Thus we find a total of nearly half a million trees of the reserved kinds felled or extracted during the year.

6. The figures cited as stated above are below the actuals. Mr. Whittall, the Deputy Conservator of the Rangoon division, reports that reserved kinds of trees have been extracted without a permit, possibly in a few cases in ignorance, often with a view to defraud, but in the large majority of cases because the extractors did not realize that prompt action would follow the issue of the notification. The Prome Officer makes similar remarks, ascribing however the

illicit extraction generally to ignorance, or a misunderstanding of the notifications. The other Divisional Officers generally concur with these views.

Nevertheless, the figures before us show that, if at present not the financial, still the economic value of the forest produce of our Burma forests is considerable,—an economic value against which that of the 10,000 teak trees which, under Dr. Brandis' working plan, may annually be felled in the Pegu division sinks into insignificance.

The above statistics may therefore be accepted as sufficient proof of the importance of the reservation and taxation of other forest produce than teak.

7. The proportion of timber given free for domestic and agricultural requirements to that granted for trade purposes stands in the different divisions as follows:—

Divisions.	For domestic purposes.	For trade.
Rangoon	2,788	28,701
Prome...	7,248	13,453
Western	9,443	6,221
Shwe-gyeen	2,805	3,887
Toungoo	13,600	3,524
Tharrawaddy	4,261	2,335
	40,095	58,121

These figures, however, require remarks, which must be made division by division. No general result can be drawn from them, as the notifications have been differently interpreted by different District and Forest Officers.

8. In the Rangoon division, the Forest Officer and Deputy Commissioner held similar views on the subject, and consequently our returns show less than one-tenth of the whole outturn as granted free for domestic purposes to people living in the vicinity of the forest. Nevertheless, Mr. Whittall, to whom the palm is due of having gone most thoroughly into the whole question, writes:—

"With but few exceptions, the free permit-holders may be described as living in the vicinity of the forests, but it is doubtful whether they required the wood for domestic purposes or not. They represent that they do so require it, and no further enquiry is made. It remains to be seen, during the ensuing floating season, if they will devote the wood to the purpose for which it was given."

His suspicion proved correct, and already many of the free permit-holders wish to change their A. permits for B. permits to enable them to bring the timber into the trade.

9. The Prome Officer, in whose division the timber granted free of charge for domestic and agricultural purposes amounts to about 33 per cent of the whole outturn, reports:—

"The granting of free permits has been confined to persons who require the timber for their own domestic use. Generally these permits have only been given to persons living in the district at a distance from the large towns, though not in every case; for instance, after a fire in Allanmyo, the Deputy Commissioner gave free permits to most of the people whose houses were destroyed, but I believe only to such persons who intended rebuilding their houses themselves, and not employing professional carpenters.

10. The term "villages in the vicinity of a forest" is rather difficult to define. Nearly every village in the division is surrounded more or less by jungle.

The town of Prome is only eight miles distant from a large Eng forest. Allanmyo is still nearer to a forest; in fact, owing to the hilly nature of the country, jungle occurs pretty nearly everywhere. It appears to me that the District Officers in granting permits have been guided more by the means of the person requiring the permit, and the use to which it is intended to put the timber, than by the actual propinquity of the forest. Since the 1st of April some 1,400 trees have already been granted free for the rebuilding of houses in Allanmyo, Kama, &c.,—large villages on the Irrawaddy that have suffered from fire."

11. The definition of "villages in the vicinity of the forest," as construed by the Forest Officer of Shwe-gyeen, as well as by the Deputy Commissioner, is to say the least of it exceedingly broad, and no wonder that the free permits amount to over 42 per cent. of the whole outturn.

Mr. Nisbet writes as follows:—

"The definition of 'villages in the vicinity of forests' is open to discussion. In its narrowest sense, a village is in the vicinity of that forest to which it is most nearly situated. If the supply of timber required is not to be found in such forest, but in one a considerable distance farther off, I have no hesitation in considering the village in the vicinity of this latter forest. This also appears to have been the view held by the District Officers, and guiding them in the issue of free permits. This definition often holds good in the Sittang sub-division."

12. The Western Division shows 60 per cent. of the whole outturn granted under free permits, and Mr. Palmer writes:—

"Wood has been granted on free permits to men living in Henzada and Bassein, and in my opinion these are not villages in the vicinity of forests. It is very hard to define what is meant by 'villages in the vicinity of forests,' and the term will have to be changed, or some clear definition of it given. Most of the free permit timber is cut in forests many miles from the residence of the permit-holder."

13. In the Tharrawaddy division 63 per cent. of the total amount granted has been given free. Mr. Wild writes:—

"The Forest Department has no authority to grant free permits. I am inclined to believe, however, that in almost every instance free permits have been granted without further reference to applicants who stated in their petitions that the timber was required for their own use. I am further inclined to believe that in many cases the permit has been granted for the number of trees asked for, though this may have been excessive.

"'Villages in the vicinity of forests' are in my opinion such villages as are situated within a certain radius, say four to six miles of forests on which the inhabitants are more or less dependent for the supply of their domestic and agricultural wants. I believe little notice has been taken by District Officers of the proviso 'in the vicinity of forests;' at all events, in some instances permits have been granted to fell from forests 17 miles off the village in which the free grantee lived."

In the Tharrawaddy division free permits have been issued for inhabitants of the towns of Myanoung, Zeegon, Poungday, and Thongzai for 1,508 trees.

14. Still more extravagant are the ideas on the subject in the Sittang division, where 76 per cent. of the whole outturn has been granted free.

"Free permits," the Divisional Officer reports, "have been issued by the Extra Assistant Commissioners to all applicants without reservation of any kind."

There has been no restriction, and the rich inhabitants of the large villages in the plains received the same benefits as the poorer classes in forest villages. Free permits for 863 logs were, for instance, given in Toungoo itself, and for 3,455 in villages on the Sittang. This most certainly was not intended and must be altered. Dr. Adamson writes further:—

"Some of the purposes for which free permits have been issued can scarcely be said to come under the head of agricultural or domestic wants. *Khyoungs* and *zayats*, as well as bridges and fishery weirs, figure largely. I sent you a

permit in which, I think, 800 trees were given for a fishery weir, and I have before me permits for the following purposes :—

1 for 500 logs for a bridge.
1 „ 860 „ „ ditto.
1 „ 888 „ „ *khyoung*.
1 „ 500 „ „ *tay*, probably for holding a *pway* in.
1 „ 200 „ „ ditto ditto.
1 „ 104 „ „ burning a hpoongyee.

"The Akhoonwoon has also issued free permits for Thingan boat hulls. When permits are issued to the inhabitants of towns, they will generally hire residents in or near the forests to extract the timber for them."

Timber granted for monasteries and *tays* for celebrating *pways* ought to be paid for as luxuries, even in villages in the vicinity of the forest; and timber used for the burning of a hpoongyee cannot possibly be regarded as required for an agricultural or domestic purpose. Moreover, the burning might have been as effectually done with unreserved woods.

15. The above remarks will sufficiently explain that in some districts the proviso that free permits may be granted only to villagers residing in the vicinity of the forest, and for domestic and agricultural purposes, have been wrongly interpreted: in others altogether ignored as regards both the terms used, *viz.*, "villages in the vicinity of the forest," and "domestic and agricultural purposes."

16. The year's working has proved that my supposition—on which I in the first instance, 18 months ago, defended the imposition of payments on forest produce—that the extraction of nearly all forest produce in British Burma was carried on for the purpose of trade, and with the object of profit, was a correct one. The trade in such produce is even more extensive and universal than I was led to believe by the results of my preliminary enquiries. Throughout the province the trade is in the hands of professionals, who in most instances are not cultivators, but live on the proceeds of their trade, on which till lately they paid no duty or revenue whatever, and even now are only taxed on certain classes of timber and other produce. By referring to the enclosures to Commissioner's letter No. 320-35C., you will observe that my opinion is more or less acknowledged by many of the District Officers, though there are still some who, whilst they admit that the trade is carried on for gain, regard a demand for payment on material belonging to the State as a hardship to the individual.

17. In the Rangoon, Bassein, and Shwe-gyeen districts *par excellence*, as well as in the Henzada district, the whole supply of timber, firewood, charcoal, bamboo, and other forest produce is in the hands of professional timber-traders, and it is a mistake to believe that people ever were in the habit of supplying themselves with forest produce. Mr. Whittall remarks:—

"I do not think that there is one man in a hundred who, living, so to speak, in the midst of a forest country, actually supplies himself with the material he requires from the forest. The whole thing is done in the way of trade. There is a certain class of people living on the floating streams, which are the highways of the exports from the forests, who devote themselves to the extraction of timber, and who earn their living by it; and any Burman, be he who he may, whether living in the vicinity of the forest or not, purchases his wood from these people. So numerous is this class, and so extensive the trade, that certain districts are almost entirely engaged in it. Above the town of Pegu on the Pegu *choung*, above Taulatai on the Hline and Hlaigoo on the Hpounglen river, the villagers do not cultivate enough ground to supply themselves with food, but import largely. Thus I maintain that it is quite a delusion to suppose that a hardship would be inflicted by the reservation of certain woods *upon a class of people in the habit of getting their wood gratis from time immemorial.* It is not the timber merchant, who has got his wood gratis from time immemorial, but the consumer —the man who requires a new plough, a new pair of cart wheels, a new and better house—buys, and from time immemorial has always bought, what he wants from the professional timber merchant, and this too when he lives well in the vicinity of the forests, right up the floating streams, and close to the spot whence the wood is obtained. The vicinity of the forests has nothing to do with it.

"The few people who really do extract material for house consumption are the inhabitants of some inland villages in the proximity of forest districts.

I have found people from Phayagalay on the Pegu and Toungoo Road cutting their own house-posts, with their own carts and buffaloes for carrying them out. These are rare instances, and then only done by the very poor. But Phayagalay and the surrounding hamlets are supplied with bamboos from the neighbouring forests by one firm, so to speak, of merchants. The inhabitant of Phayagalay does not supply himself with bamboos.

"Thus the practical result of giving people, living in the vicinity of the forests, their wood free, is to allow the timber merchants to extract a certain proportion of their season's wood free of tax. Even before these woods were reserved, the consumer, living in the vicinity of the forests, purchased his wood from the timber merchant. He will still continue to purchase the wood for which he gets a free permit from these same merchants at probably the same rates, and the person who really benefits by the free permit is the merchant who is thus released from paying the tax which would otherwise be levied. The permit-holder simply indents on the merchant for the amount of wood specified on the permit, and he pays the merchant's rates. It is, however, quite possible that the introduction of these permits may inaugurate a new era, and the free permit-holders may send their own coolies to cut and extract for them."

18. Mr. Nisbet remarks on the trade in forest produce in his sub-division:—

"Throughout this sub-division there is a considerable timber trade, more especially at Shwe-gyeen and in the large villages in the southern part of the district. At all important villages along the Sittang river there are petty timber traders: Awine has two, Pazoonmyoung one, Opho Gwai one, Shwe-gyeen five, Sittang four, Kheikhto three, and Winpadaw one; and there are others at Kaukadoot Beeling, and Yinong; and Kyoukyee has two. It would be well were such traders forced to register all their saw-pits in the sub-divisional forest office,—a small license fee being charged for each pit granted. The Forest Officer should have the power of refusing to grant such licenses for places where he fears the control of the trader's operations will be too uncertain. The issue of such licenses should, like the right of granting trading permits, be vested in the Forest Officers. These sawyers live solely from the profits of the timber trade, and do not at the same time carry on cultivation. They generally own elephants for the extraction of logs to supply their own pits, but often engage to drag timber for other people. The trade in bamboos lies chiefly in the hands of Karens, who cut them in the hills and float or drag them to the local marts. Prices in Shwe-gyeen range from Re. 1-8 to Rs. 20 per 100, according to the size."

There are altogether above 60 professional timber-traders in the Shwe-gyeen division.

29. The Bassein Report also shows the trade to be entirely in the hands of professionals.

Mr Oliver, Prome division, reports:—

"In nearly all villages along the Irrawaddy there are men who, besides cultivating *toungyas* and paddy land, employ their time during the dry season in bringing out timber to the river bank. This timber is bought up by traders from Prome and elsewhere. In Prome there are about 12 men who are exclusively employed in the timber trade. They buy the timber at the various villages, and transport it by means of boats to Prome, where it is sold. In nearly every river-side village there are also, as a rule, one or two men who trade in timber on their own account. The timber is dragged from the forest to the river by buffaloes and then floated, the logs being suspended in the water on each side of the boats. A boat of 200 baskets burden will carry 30 to 40 ordinary Engyin posts for Burman houses. The logs thus brought out are necessarily small. Engyin and Theya of large dimensions are very scarce in the more accessible forests. Whether this is from over-cutting or from the poverty of the soil I am unable to say, but I suspect chiefly from the former cause."

20. To give an idea of the importance of the trade in the various forest produce, I here subjoin a list of material which passed the Awine revenue and check station on the Pegu *Choung* during the seven months from August 1876 to March 1877.

Awine Statement.

Date.		Names of trees.																				
		Teak.	Kanyin.	Thingan.	Pyinmah.	Pynkadoe.	Hsaitchye.	Kounghmoo.	Toung-bein.	Yamanay.	Htouk-khyan.	Hpet-woon.	Hlwa-nee.	Kyokyo.	Ngoo.	Tharaphoe.	Toung-saga.	Thabye.	Myouk-khyaw.	Nabie.	Mahlwa.	Baunbway.
1876.	August	130	351	1	10	2	16	4	1	...	...	...	...	...	...	...	...	...	...	...	...	...
„	September	777	776	16	72	...	12	...	34	21	50	5	50	...	...	...	...	...	...	...	..	...
„	October	180	573	83	456	69	29	15	135	1	318	132	64	164	28	2	3	...	...	...	...	...
„	November	270	61	2	252	186	221	10	8	...	850	193	360	193	5	...	...	...	...	...	...	...
„	December	...	...	...	13	...	...	...	5	2	50	110	45	...	4	...	...	...	...	...	...	...
1877.	January	...	...	...	...	...	21	...	...	1	17	38	42	...	11	...	...	...	...	...	...	...
„	February	...	...	...	13	...	125	...	...	1	137	49	115	...	27	...	...	...	...	...	...	...
„	March	...	...	...	...	...	143	...	...	...	1	107	72	22	45	...	...	37	2	5	10	14
	Total ...	1,357	1,761	102	816	257	567	29	183	26	1,423	634	748	379	120	2	3	37	2	5	10	14
			1,814	107	617	60	Extracted under permits.															

Awine Statement.—(concluded).

Date.		Name of trees—(concluded).						Number of Bamboo cane and Shah.			Number of Saloo, Thitka and Toungdau.			Wood-oil, Mikeah, and Bamboo mats.			Remarks.
		Zeophyoo.	Zenbyine.	Thityah.	Engyin.	Miscellaneous logs.	Grand Total.	Bamboo.	Cane.	Shah.	Saloo.	Thitka.	Ktoungtau.	Number of torches.	Number of Mikeah canes.	Bamboo mats.	
1876.	August	...	...	...	...	248	763	1,67,241	20	...	5,500	...	...	500	...	...	
„	September	...	...	...	...	1,310	3,123	1,36,669	36	...	...	...	...	...	2,90,000	...	
„	October	...	...	...	...	1,348	3,600	2,78,551	...	60	12,100	...	...	...	1,70,000	...	
„	November	...	...	...	...	591	3,202	2,65,148	...	20	1,800	...	...	...	1,000	...	
„	December	...	...	...	...	15	244	82,805	...	1,000	...	...	...	...	17,000	...	
1877.	January	...	...	...	...	...	130	1,30,097	60	960	...	...	...	...	45,000	...	
„	February	...	...	...	...	...	470	2,45,076	...	2,200	12,000	4,730	17,500	...	...	...	
„	March	1	2	...	...	...	461	3,21,920	...	1,110	1,51,150	86,600	14,68,580	...	...	...	
	Total ...	1	2	...	...	3,512	...	16,27,507	116	5,350	1,82,550	91,330	14,86,080	500	5,23,000	...	

21. On the Pegu *Choung* rafts of bamboo may be met throughout the year a hundred yards long and laden high with Shah, Thitka, Saloo, and Ktoungtau. They pass Awine in rapid succession, floated when the stream is high, or drawn by men and buffaloes when the water is low.

The cutting commences in April, and goes on without interruption until the end of January. Hundreds of Shans from beyond Toungoo, after having sold their cattle at Rangoon, take the Pegu *Choung* on their return, and work for the merchants. The whole country is engaged in the trade, and the villages are deserted. They cut and carry the forest produce to the main river and its feeders, and make and load the rafts till the falling of the waters in January warns them to push on. The cutters—the coolies from Htantangyee up to Kyen-klaga—are paid ten annas a hundred for the bamboos delivered on the main river ; and the price at Pegu ranges from Rs. 15 to Rs. 30 per 1,000, and at Rangoon from Rs. 20 to Rs. 70. The profits of the traders on their original outlay are very large. The same is the case as regards Saloo, Thitka, and other produce.

The trade on the Hline is similarly managed, leaving large profits to the actual trader.

22. A very extensive trade in bamboos is also carried on by traders from Prome and several villages on the Irrawaddy. The bamboos are all of the Myinwah species, and are brought mainly from the Mindoon district. The Mindoon river is navigable for small boats and bamboo rafts throughout the year. The bamboos, which are very plentiful along this stream, are dragged by buffaloes to the water's edge, where they are formed into large rafts, floated down to the Irrawaddy, and sold at the different villages and towns along the river, occasionally being taken as far as Henzada, Rangoon, and Bassein. Not unfrequently the rafts are used as a means of transporting raw cotton, onions, chillies, and other light produce grown in large quantities in that district. The price of Myinwa bamboos in Prome is Rs. 2 per 100.

23. The firewood in the Prome division used by the steamers is supplied by contractors, who purchase it from the villagers along the river at about Rs. 8 per 1,000 billets. In the bazaars, firewood is sold by various people at four annas per 100 billets. Various kinds of jungle-wood are ostensibly used, though I have no doubt that Eng and other reserved kinds are occasionally cut.

The Railway also consumes a large quantity of fuel. At present there are upwards of 30,000 cubic feet of billets stacked at the Sinmeesway station, and about the same quantity at Thaigone. The billets are 2½ feet long, and from five inches to ten inches in diameter. Eng is the wood mostly used. It is supplied by contractors at Rs. 5 per 100 feet stack.

24. In the Thayetmyo district, in the village of Paik-thalin, nearly every inhabitant keeps buffaloes for the extraction of timber for lime-burning or to be sold as house-posts. The cultivation carried on by these men is insignificant.

25. As an additional proof that the extraction of forest produce is in the hands of a separate trade, I have only to point out that nearly all produce is extracted during the busy time of the agriculturist, though it may be felled in the heart of the forests during the dry season. The inhabitants of villages in the plains do not go, as is well known, into the forests, and, as pointed out, are occupied with agricultural labour during the time of extraction. This speaks for itself more than any further examples I could bring forward.

26. That the extraction of cutch is in the hands of professionals is so well known that it needs no further comment ; but in support of my opinion with regard to the tapping of oil-producing trees, I beg to quote a passage from a letter (No. 58-109, dated 11th April 1877) from Mr. Hough, the Deputy Commissioner of Shwe-gyeen :—

"I think that the proviso which allows the free use of forest produce which is used for the 'domestic requirements' of the inhabitants of villages in the vicinity of the forests is practically a nullity, because these are the very people who collect and make a profit out of the 'Kanyin oil.' No one thinks of tapping a tree and collecting just enough for his own use : this would not be worth the man's while when he could for one rupee buy oil and torches enough to last him three months. Supposing that a man were allowed a free permit to collect

sufficient Kanyin oil for his own domestic requirements, who is there to check the quantity he may collect, and to watch whether or not he collects more than he actually wants? If free permits, therefore, be issued, the majority would be issued upon false representations, which it would be difficult to dispute, and those who ought to pay would get off scotfree. An amount of supervision too would be required, which neither the District Officer nor the Forest Department is at present able to exercise."

27. In the case of *Dipterocarpus* trees, we have, however, to deal with a certain difficulty. In most villages near tracts containing wood-oil trees, the manufacture and trade in the oil has rested with certain families, and though these people utilize State property without any lien on it, it has been recognised by the other inhabitants that only members of this one family could tap the Kanyin trees within a certain locality.

This idea has exploded in South Tenasserim, where Government has for years auctioned the right of tapping, but is still in vogue in many forest tracts of the Pegu Forest Circle.

28. The collection of revenue on wood burnt for charcoal is much better dealt with under the provisions of the new Forest Bill. There is no doubt—and in this opinion again I am upheld by Mr. Hough (who expressed his opinion in a letter to the Commissioner of Tenasserim)—that charcoal is burned by a certain class of people for the purpose of trade. Burmans do not burn charcoal for their domestic and agricultural requirements; but under the present Notification, as well as under the Forest Rules of 1865 and 1876, we cannot tax charcoal if burned from unreserved woods; and if manufactured from reserved kinds, we can enforce the payment to be made for the trees used. I consider it, therefore, better to omit charcoal from the notification till the enhanced powers given under the new Bill allow us to deal summarily with the question in point.

29. I have thus proved in the foregoing paragraphs, that the extraction, &c., of nearly all forest produce is carried on by a professional class of timber-traders for pecuniary profit. It has been acknowledged by Government, through its actions, that trade is taxable. We have export and import duties, taxes on the liquor trade, &c., and a land revenue, which is simply the easiest way of taxing the annual produce.

If all this is justly liable to taxation, how much more so is the produce of forests where no outlay has been incurred on the production of the material.

The Government of India have recognized this principle in the draft of their new Forest Bill, section 33 of which stands as follows :—

"On all timber, the produce of forests situated within British territory or brought from any forest situated beyond the frontier of British Burma, a duty may be levied in such manner, at such places, and at such rates as the Chief Commissioner, with the previous sanction of the Governor-General in Council, from time to time prescribes by notification in the *British Burma Gazette*."

30. The objection I have to this clause is that it does not stand thus :— "On all timber *and* forest produce." I think it may be acknowledged that all forest produce may be taxed with all due deference to law and equity.

The foregoing paragraphs, proving that Government may levy an equitable duty on *all* forest produce, have reference to the future only, for, since the new Forest Bill provides for the levying of a duty on bamboos, Saloo, &c., I omit these products from the present notification drawn up under the Forest Rules of 1865. At the same time, I cannot too strongly urge my opinion that a tax on *all* forest produce is justifiable.

The main difference between reserved trees and trees on which only a duty is levied is, that in the case of the former, even within open forests, Government maintains the right to prohibit their cutting altogether, and only to sell them when they can be spared; whereas any one is entitled to fell and extract unreserved forest produce in open forests, by simply paying the duty which may be leviable thereon.

31. The next point to be considered is, how the notifications during last year's work answered their purpose.

In the first instance, it is unanimously acknowledged by all the officers whom I have consulted that they have not affected trade at all. Although there was a rise in the price of cutch on the first issue of the notification, this was of only a temporary nature. That the price of forest produce has not been affected, however, is no *bonâ-fide* proof that a more stringent working of the notification will not slightly raise the price in future, as during the first year, due to the wording of the notification, the greater part of the revenue in all other divisions but Rangoon has slipped through our fingers.

In the Shwe-gyeen sub-division, as I have already pointed out, 60 men obtain their livelihood from the timber trade, and no revenue has been taken at the revenue-stations.

32. The result of the working of the notifications from a financial point of view has as yet been a failure thoughout the province, the Rangoon and Prome divisions excepted, the whole of the income from the sale of the reserved woods amounting to about Rs. 32,000.

The only result we can lay claim to is to have proved the importance and magnitude of the trade, and to have found out where the mistakes of the former notification lay.

33. Mr. Whittall writes :—

" The system works very well so far as the revenue-station is concerned, but the experience of the past season has shown that there are many difficulties and contingencies not provided against by the notification.

"(1). There is no clause providing for the confiscation of wood being extracted without a permit. The Forest Officer's procedure is to report the breach of rule to the Deputy Commissioner, and the delays and references which take place are exceedingly vexatious. The Forest Officer should be given a certain amount of magisterial power authorizing him to confiscate this wood at once. The following is an example of what has already happened, and what will probably frequently happen during the ensuing floating season :—

A man who holds a free permit for wood for the purpose of building a house in his village runs his wood into Rangoon for sale, and the wood is stopped at the revenue-station. Now this was not what was contemplated on giving him the wood free, and he should at least forfeit his wood for attempting to pass it on into the trade. If this breach of the notification has first to be reported to the Divisional Forest Officer, enquired into by him, and then reported to the Deputy Commissioner, who perhaps may return the case for further information, a long time is sure to elapse before any decision can be come to. The Forest Officer may be miles away in another part of his division, and all the time the wood is lying at the risk and responsibility of the Forest Department at the timber-station.

(2). There is no clause which declares the balance of wood still unextracted on the expiry of a permit as having reverted to Government. Six months after the expiry of a permit the permit-holders have brought their wood to the timber-station as if nothing had happened. Nothing is easier than to apply for an extension, which is always granted when the request is reasonable.

(3). It has not seldom happened that a permit-holder has sold his wood to another party before the wood has passed the revenue station. Both buyer and seller decline to pay the duty. There should be a provision against this.

(4). The felling-rate is levied on *trees*, but the wood which passes a revenue-station is generally in logs. A man may get 150 logs out of 100 trees : as it is not known how many logs he really gets out of his 100 trees, whether 150 or 175, there is no check at the station. A favourite way of evading the payment on the tonnage is this :—A. B. permit-holder, sells his wood before floating to Y. Both X. and Y. refuse to pay tonnage, X. because *he* is not extracting the wood, and Y. because he purchased it from X. Now Z. is a free permit-holder. Y. arranges with Z. for a small payment that his wood should pass out under Z's permit. Z., had only 25 trees given him, but he brings 75 logs to the station, saying that each tree yielded three logs. As a matter of fact 50 of the logs should be revenue-paying logs. This should be specially provided against.

(5). The notification only considers wood which passes a timber-station. It often happens that this is not necessary. There is however local consumption as well as Rangoon consumption, and B. or revenue-paying wood is often sawn up, cut into wheels, or otherwise converted in the forest, carted out, and disposed of before the wood has been measured and assessed.

A clause should declare all wood converted before the tonnage has been paid confiscated to Government.

(6). The notification allows more than one officer to grant permits in the same district. This must inevitably create difficulties. A Civil Officer gives out the monopoly of extracting Kanyin oil over a circle. The Forest Officer probably gives out several B. permits over the same area. The D. permit-holder refuses to allow the B. permit-holder to fell a single Kanyin tree over the circle. Petitions and perhaps litigation ensue.

(7). There should be some clause either prohibiting or allowing the holder of a pottah from felling and selling the wood of the reserved kinds. Wood is brought past the revenue station without a permit, and, on explanation, it appears that it has been bought from off a pottah. The purchaser suffers no doubt from the delay occasioned by the investigation into the accuracy of the statement. But, at the same time, warning should be taken from what has been done so extensively in India, *viz.*, the deforesting of large areas by a similar process. Grants of land were applied for and given. The wood was felled and sold, and the land abandoned : the grantee finding it no longer suitable applies for, and often obtains, a second grant, which he treats in the same way, and so the process goes on. It should first be decided whether the pottah-holder may or may not sell the reserved timber on his land, and, if decided in his favour, the wood should be marked by the Forest Officer, so that it may not again be stopped anywhere. Without this marking, there is sure to be difficulties.

(8). Wood changes hands very frequently in its course down the floating stream. The man who brings it past the revenue-station is often not the man who took out the permit. There should be some system of registering these changes. Wood has been allowed to pass a station on the assertion that it was bought from a certified permit-holder. Next tide brings the permit-holder with his full complement of wood. He indignantly denies ever having sold any of his wood, and the Overseer at the station sees that he has been imposed upon. On the other hand, the story is sometimes true, and the permit-holder cannot understand why he should be called on to certify that he sold a certain portion of his wood to a certain party.

(9). There is no clause confiscating wood brought in excess of the specification on the permit, or in any way differing from this specification (for example, when the permit says Kanyin, and Pynkadoe is brought out, it should be liable to confiscation).

(10). In fact, what is wanted is more authority in the hands of the Forest Officer. The different ways in which the notification can be broken should be fully described, and on any breach occurring the wood should be *ipso facto* confiscated, and at the disposal of the Forest Department. While insisting upon this confiscation, I do not wish to be understood to mean that every and any breach of the rules must necessarily be followed by actual confiscation and loss of the wood. It is not the interest of the department to seek to confiscate as much as possible ; but rules should be obeyed and if broken should be punished, and the degree of such punishment is appropriately in the hands of the Forest Department, provided the maximum is confiscation, and the liability of being prosecuted. What I mean is, that the local Forest Officer should have the *power* to declare wood confiscated on a breach of the rules having been committed without reference to the Deputy Commissioner. Actually he would inflict a small fine above the tonnage value of the wood, and let the man have his wood. The object to be aimed at is to teach the people what the rules are, and to show them what may *not* be done, and that, if an offence is committed, punishment will surely follow. The punishment need not be great, but punishment there should be.

The Burmans are a fairly law-abiding people and will soon learn. When a man finds that, if he breaks the rules, the result is that he has to pay something

in excess of what he would have paid if he had followed the rules, he will soon give up trying to evade them. There is as a rule no necessity for prosecution or for enforcing the full penalty. This should only be resorted to in grave cases. To work this successfully, however, prompt action is essential; and hence referring such cases to the civil authorities for decision is out of the question. There must inevitably be delay, which would be harassing to both wood-owner and Forest Officer, and the Civil Officer would have to go over the whole story again, with which the Forest Officer is already familiar.

There should also be a penalty attached for not giving up the permits on expiry to the nearest revenue-station or forester. The reason that this is necessary is because old and expired permits are made use of to deceive purchasers. Cases are constantly occurring of people from a distance from the forests—such as Syriam, Rangoon, Thonkwa—purchasing wood from persons who have never taken out permits, and who have come illicitly by their wood.

These old permits are used to deceive the purchaser, and make him believe that all is right, that they have a permit for the wood, and that this permit will pass the wood at the station.

Nearly every instance of wood being passed out under a worthless permit has shown that the wood has been purchased by down-country persons, and that they have been made to believe that the sellers were entitled to the wood they sold. Such are the difficulties against which the notifications do not seem to provide. Further experience may point out further improvements.

34. Mr. Wild makes similar remarks :—

"The system of collecting revenue at revenue-stations does not work at all in this division, as most of the wood extracted under trade permits never reaches a revenue-station, but is consumed near the spot of extraction, and hence in most instances no revenue at all is collected upon it. What I am referring to however are mostly Railway transactions—wood brought out for the Railway. In cases where permits are granted by me, I always apply to the Railway authorities for the measurement of the timber when extracted, and bill for it.

"It is a matter of much thought and experience to frame a really efficient system for the collection and levying of duty; and for the present I would retain the revenue-station, as these can easily collect the revenue on timber taken to Rangoon.

"On timber which it is likely would not be removed far out of the forests, I would collect the revenue on measurement statements of the forester in charge of the beat from which the wood is extracted, not allowing the grantee to remove the timber till the revenue has been paid. This I know would be somewhat harassing and tedious, but still at present I do not think I can propose a better plan."

35. Mr. Oliver reports :—

"The system of levying duty on timber by revenue-stations works on the whole well. A payment of a fixed rate per log, the logs being divided into different classes, would perhaps be a simpler method of realizing the revenue, except in the case of Eng, which is generally brought out in scantlings. When large quantities of timber arrive at the station, a good deal of time is taken up in measuring the logs and calculating the tonnage. The delay thus caused is naturally very annoying to the owner of the wood. Another objection to the system is, that it imposes a very unequal tax. Persons living in Prome, for instance, have to pay a much higher price for their timber than people living at Allanmyo. The only way I see, however, of avoiding this would be to abolish the tonnage duty altogether, and to increase the felling-rate in proportion. I do not think it would pay to increase the revenue-stations."

36. Mr. Nisbet, Shwe-gyeen, reports :—

"The system of levying duty on timber of reserved kinds by making Shwegyeen a revenue-station has been a miserable failure. On the few B. permits issued, not a pice of revenue in addition to the cutting fee has been collected since I received charge of this sub-division, for no logs has passed the revenue-station. I cannot too strongly urge that this part of the notification be reconsidered and altered. The right of granting trading permits should be vested

solely in the officers of the Forest Department, and when the permits are granted, the logs should be at once paid for at the following rates, irrespective of size :—

Pymmah or Eng	Rs. 2 per log.
Thitsee, Pynkadoe, Anan, Kanyin	„ 2-8 „
Thingan	„ 3 „

"*Koko, Padouk, Engyin, Theya, and Shah* should not be granted for trade purposes in this sub-division, as they are of seldom occurrence. In place of these, *Nobah, Thabyee, Panga, Yamanay, and Zinbyoon,* might *for this sub-division* be substituted, and trade permits might be issued for these at Rs. 2 per log."

37. Mr. Palmer makes similar remarks :—

"The system works very well as long as the timber passes the revenue-stations, but very badly on the whole. Not two per cent. of the timber ever comes near a revenue-station, and I have to send out men to collect the revenue on the date of expiry of the permits. This leads to a great deal of dissatisfaction, as some of the permit-holders do not cut the number of trees marked on the permit, and are therefore dissatisfied when called upon to pay revenue on wood which they *say* they have not cut. Another thing is that the Revenue Collector, the Forest Ranger of the range has a very good opportunity of pocketing half the revenue. Charging so much *per log* is what I recommend, not per tree, Rs. 3 per log would be quite enough, and this would encourage the men to bring out the big timber first."

38. Dr. Adamson states :—

"The revenue on timber of reserved kinds has been levied in this division by the ordinary establishment of the Toungoo Office. The River Goung measures the logs in the river. A measurement statement is prepared in the office, showing the amount of revenue due, and this is filed and a pass (schedule No. 5) is given to the permit-holder on payment of revenue, which is at once sent to the Treasury. The Divisional Officer has then to proceed, say, next morning, and mark the logs with sale hammer, and I have often to go a mile or two to mark a single log. It is when the logs are not brought to Toungoo that there is a difficulty. It is impossible that I can go three or four days' journey to mark a few logs, and the sale hammer cannot be trusted out of my own charge. In a few cases of this kind that have happened, I have been obliged to dispense with marking the logs with the sale hammer, and only had the forest mark applied."

39. You will observe that the objections to the practical working of the notification are so numerous that they can only be met by a new draft.

The first main objection is that large forest areas within the province are still excluded from the working of the Forest Rules of 1865, and the subsequent Rules of 1876. These areas, many of which contain large numbers of the reserved trees, are naturally resorted to by the timber-traders, and often, if wood is found in transit without a permit, are pleaded as an excuse ; and though the timber may have been extracted from forest declared Government forest under Forest Rules, this is most difficult, if not impossible, to prove. All District and Forest Officers in whose districts or divisions both classes of forest land exist agree with me, and Major Seaton expresses the same opinion. *The first step, therefore, should be to bring the forest areas still excluded from the working of Forest Rules under the Rules of 1876.* This can be effected under Act VII. of 1865, in the same manner as the forests declared Government forests in notification No. 49 of 1876 have been brought under the Rules of 1876 issued in notification No. 50 of the same year.

40. The next difficulty is the issue of free permits. The reservation of certain trees must not (outside of such areas as may have been taken up as State reserves, or as are in the course of selection) interfere with cultivation, whether of a permanent or rotary character. The slightest restriction of permanent cultivation would be, in a country like Burma, a most suicidal policy ; and even in the case of *toungya,* as long as Government acknowledges this anti-mediæval system of cultivation still to be a necessity for the country, it would not be equit-

able to curtail its practical working by numerous restrictions, whilst permitting it in theory.

The people must therefore (unjustifiably wasteful as it seems in many cases) be allowed to fell and burn in any open forest for *bonâ fide* purposes of cultivation any of the reserved trees with the exception of teak.

To prohibit this in case of *toungya* would be out of harmony with the present policy of Government, and would raise discords, not only between the people and the Forest Department, but also between us and the representatives of the people's privileges and rights,—the District Officers. This of course must be avoided even at the cost of present waste, and no doubt the progress of time will settle the question.

At present we have only to guard against land being taken up for the purpose of obtaining forest produce for trade. This has been done in India, and I may quote the Kangra Valley, the Derah Doon, and the Oudh forests. There land was taken up, the trees on it were felled, extracted, and sold, and the land, perhaps cultivated for a year or two, was abandoned.

I wish not in the least to interfere with timber, even of the reserved kinds, on the clearings themselves, being used free for the building of houses and other domestic and agricultural purposes, but object to its being extracted for trade free of charge. This of course refers only to permanent cultivation; *toungya*-cutters do not build houses with timber, nor are they otherwise a wood-consuming community, though they are often traders in forest produce, or the workmen of traders.

41. It is a difficult question to decide who is entitled to the free usage of forest produce and who not. It is too vague and undefined to issue a notification simply stating that free permits for forest produce shall be granted to villagers in the vicinity of the forest for their domestic and agricultural requirements. I have already shown in a former part of this report that this clause is differently interpreted by every one in authority.

What is ultimately wanted of course is the formation of village forests, from which the inhabitants may draw their supply for domestic and agricultural purposes, leaving the rest of the forest land entirely under Government control. Mr. Powell recommended this in 1873, but as yet nothing has been done to give effect to his proposal, although the advisability thereof has been acknowledged.

The first step in my opinion should be that the District Officers be requested to submit proposals accompanied by a sheet of Fitzroy's map of their district, enumerating and marking those villages which they consider on account of their position entitled to free forest produce. There must be of course a limit as to distance; and I am of opinion that no free user should be permitted at a distance of more than three or four miles from a village. At present of course the inhabitants of these villages would be still subject to certain conditions laid down in the notification now under discussion; but if we have once so far advanced as to know what villages will be entitled to forest produce, areas can gradually be selected for them and demarcated, and free use of the material may be allowed within these areas, under the sole restriction that the produce is consumed in the privileged village. Where new villages are created, provision for forest land can be made in the grant. One thing must be kept in mind, *viz.*, that we do not intend to recognize any privileges, even of villages in the midst of forests, to extract timber or other produce for the purposes of trade under a free permit, or from lands set apart for the requirements of a village.

42. For the present I have entered in the new draft of the notification that no free permit should be granted at a distance of more than four miles from the habitation of the permit-holder. It is also necessary to explain the proviso "for domestic and agricultural purposes." For instance, a boat-builder, though living in a village in the very heart of a forest, is not entitled to a free permit for timber to build boats for sale; nor can a cartwright claim his wood free for wheels; nor a blacksmith his Thitsee and other hard wood for charcoal; nor a fishery contractor his poles for the building of weirs (which by-the-bye are the cause of most obstructions in the *choungs* east of the Pegu Yoma).

43. Free permits for the boiling of cutch and extraction of wood-oil and resins should not be granted, as the trade in these articles is entirely in the hands of forest villages, and as the local consumption is exceedingly small in comparison to the amount brought into the trade.

I beg here to extract a paragraph of letter No. 2238-500 to your address, dated 7th March 1877 :—

" I have the honour to send you duplicate of six free A. permits issued by the Akhoonwoon of Toungoo. You will observe that the first four permits are for the extraction of wood-oil, and represent 1,600 trees granted to four persons. Each tree yielding about five viss, the permits amount to 8,000 viss of wood-oil. It is out of the question that such an amount of oil is required for the private use of four people."

I beg also to submit 31 D. permits for the extraction of wood-oil on which no payment has been made. This is against the rules contained in the notification ; moreover, these permits do not fix any limits as regards the extraction of oil.

It must be kept in mind that the present notification is not drawn up merely with the idea of levying a revenue, but more for the purpose of reserving certain woods which are in many instances likely to be overworked, or have already been over-extracted. I may instance Kanyin in the Pounglin district. Mr. Whittall estimates the number of trees left on the Pegu *khyoung* to be equal to not more than three times the amount annually extracted.

44. Other trees again, such as Kanyin, Thitsee, &c., are more valuable as oil-yielding trees than as timber or fuel, and must therefore be reserved.

It is for this reason that I wish to allow the indiscriminate issue of free permits only for a certain number of the species enumerated,—trees which are more numerously represented, and at the same time most common in use. For the same reason, to prevent an indiscriminate felling, I propose that in future the issue of trade permits should entirely rest with the Forest Department. It must be understood that it was the intention of the forest notification that the reserved trees should only be felled when they could be spared, and that a simple payment should not entitle any one to fell any of the reserved kinds. At present the provision is misinterpreted in many instances, even by some Forest Officers, who are under the impression that a trade permit for which payment is tendered cannot be refused, though it may endanger the well-being of the forest. This is against common sense, but I have found it necessary to provide for it in the new draft.

45. Another and perhaps the most difficult question is, " how is the revenue to be collected, how is the extraction to be supervised, and how are misuses to be prevented ? "

Of course I have it dinned into my ears from all sides that more establishment is required; but I have to keep Mr. Lowe's principle before my eyes that a State cannot afford to collect a revenue which costs more than it brings in, and I am therefore exceedingly cautious in recommending an increase of establishment. As soon as a duty is levied on all forest produce under the new Forest Bill, the revenue will at once sufficiently increase to allow of the establishment of numerous revenue-stations, but at present they can only be established on the main arteries of the timber trade.

I would propose that the villages near the mouths of floating *choungs* be constituted forest revenue-stations, and that the thoogyees of such villages should collect the payments due on such timber as may pass out from the *choungs*, receiving percentage on the amount collected. This however is a question which requires ventilation, and on which the opinion of District Officers is of much more value than my own. In the meantime it was necessary to devise some other means of levying the price payable on timber of the reserved kinds sold ; and it is for this reason that I have entered the several provisos in the new draft, leaving it to a certain extent in the hands of the Forest Officer how to levy the revenue.

46. The draft notification with regard to this requires no further explanation. The present rates levied on timber are in my opinion, and the opinion of

most officers of the Forest Department, not too large ; still I have made a provision in Section B. of the draft notification, empowering the Divisional Forest Officer to sell the timber under particular circumstances at lower rates. An alteration which I found necessary is to notify the timber under their botanical designation, as constantly disputes were arising with regard to local names. Thus Thingan was called Koungmoo ; Thitka, Kashit, &c.

The new draft also provides for the confiscation of timber not covered by permits.

The rules in the old notification with regard to reservation of cutch have had no other effect than to raise a revenue, and I have provided in the draft for the temporary rest of cutch forests for reproduction ; however, the chief danger to forests of this description lies in the indiscriminate *toungya*-cutting, which will sooner or later denude large tracts of this dry and arid kind of forests. As regards the extraction of Kanyin oil, all District as well as Forest Officers are unanimous that the farming out of circles would be best.

APPENDIX A.

Limits of the forests.

II.—The Government forests of British Burma are bounded and limited as follows :—

FIRST.—*Forests between the Irrawaddy river and the range of hills east of the Sittang river.*

These forests comprise the hills and valleys of the Pegu Yoma range, and are bounded as follows :—

On the west by a line passing from the station of Meaday through the points of junction of the following streams :—

Boolay and Pudday,
North and Middle Nawing,

thence to the head waters of the Meimakah river east of Prome, and along that river to the mouth of the Myoung-dagah *khyoung* in the Rangoon district.

On the south by a line drawn from the mouth of the Myoung-dagah *khyoung*, across to Pegu town.

On the east by a line drawn from Pegu town to Bawnee village, thence to Kanyinokdoh village between the Binedah and Yainway streams, thence to the junction of the Woon and Koon streams, and thence across the Sittang river to Kyoukkyee town and to the hills between the Sittang and Salween rivers, and along the line of watershed between the Sittang and Salween rivers to the northern frontier line.

SECOND.—*The forests in the Tenasserim division of British Burma.*

1.—The Beeling forests above the village of Phawota on the Beeling river.
2.—The Yoonzaleen forests above the village of Kadinetitat on the Yoonzaleen river.
3.—The Domdamee forests above the junction of the Domdamee stream with the Salween river.
4.—The Thoungyeen forests between the hills bounding the Thoungyeen valley on the south-west and the Siamese boundary line.
5.—The Attaran forests above the junction of the Zimmay and Winyeo streams.

Other trees and bamboos are free, with certain exceptions.

XII.—All trees (except teak), as also bamboos, are free. But it shall be lawful for the Chief Commissioner to authorize the levying of duty or the felling, cutting, or otherwise using of trees of other kinds; as also of prohibiting these being felled, cut, tapped, or in any way made use of if they are below a certain size. It shall also be lawful for the Conservator of Forests, or his assistants, to prohibit the felling, cutting, or otherwise using of any trees which they may have marked or girdled.

APPENDIX B.

REVENUE DEPARTMENT.

NOTIFICATION.

No. 49.—*The 30th March 1876.*—In exercise of the powers conferred by section 2 of Act VII. of 1865, the Chief Commissioner of British Burma is pleased to render the forest tracts specified in the schedule hereto annexed subject to the provisions of the said Act.

SCHEDULE.

Pegu Division—I.—Forests west of the Irrawaddy river, and comprised within the following boundaries :—

North.—The frontier line.

East.—Irrawaddy river from the frontier, and the Gnawun creek or Bassein river to the sea.

West and South.—The Arakan Yoma from the frontier to the watershed of the Kyantalee *choung*, or south boundary of the Sandoway district ; thence the Kyantalee south watershed to the mouth of the Kyantalee *choung*, and the line of the sea-coast southward to the mouth of the Bassein river.

Tenasserim Division—II.—Shwe-gyeen district.—Lower Shwe-gyeen forests comprised within the following boundaries :—

West.—A line drawn from Bawnee village to Kanyinokdoh village between the Binedah and Yainway streams, and thence to the junction of the Koon and Woon streams.

North.—A line thence to Kyouk-kyee and eastward to the watershed between the Sittang and Salween rivers.

East.—The Sittang and east watershed.

South.—The Bawnee stream to its junction with the Sittang river; thence the Sittang river and south watershed of the Kyoungpay stream to the Sittang east watershed.

III.—Yoonzaleen District.—Upper Salween forests embraced between the following boundaries :—

East.—The Salween river from the mouth of the Thoungyeen river to the mouth of the Pah *choung*.

North.—The Pah *choung* to its source.

West.—The Salween west watershed and Yoonzaleen east watershed range.

South.—A line drawn west from the mouth of the Thoungyeen river to the Yoonzaleen watershed.

IV.—The forests on the west face of the Donat range and at the sources of the Houndraw river : their boundaries are as follow :—

West.—The Salween river east bank from the mouth of the Thoungyeen river to the Yimbine *choung*, a line drawn south-south-east to Weeway on the Hlinebway river, and the Hlinebway river to its junction with the Houndraw river ; thence the Houndraw river as far as a line due west to the sources of the Nat *choung* ; thence the Attaran east watershed to the Siamese frontier line.

South.—The Siamese frontier line.

East and North.—The Donat range to the mouth of the Thoungyeen river.

V.—The forests of the Lower Amherst District as enumerated below :—

(1).	The tract of country drained by the Wagroo and its tributaries.			
(2).	Ditto	ditto	Kropee	ditto.
(3).	Ditto	ditto	Anheen	ditto.
(4).	Ditto	ditto	Lameing	ditto.
(5).	Ditto	ditto	Yea river	ditto above Yea village

VI.—Forests of the Tavoy and Mergui districts :—

(1). The tract of country drained by the Henzai and its affluents.

(2). Ditto ditto Pra *choung* and its tributaries above Zadee village.

(3). The tract of country drained by the Phawa *choung* and its tributaries.

(4). Ditto ditto Tavoy river and its tributaries above the Choung-zouk *choung*.

(5). The forests on the islands known as the North, Middle, and South Moscows.

(6). The forests on Tavoy island.

(7). The tract of country drained by the Little Tenasserim and its tributaries above its junction with the Tenasserim river.

(8). The tract of country drained by the Tenasserim river and its tributaries above Tenasserim town.

(9). The tract of country drained by the Laynaya *choung* and its tributaries above Laynaya village.

(10). The forests on King's Island and all the islands to the south belonging to the Mergui Archipelago, and including St. Mathew's and St. Luke's.

(11). The forest on the west bank of, and drained by, the Pah *choung* from Malewoon upwards.

REVENUE DEPARTMENT.

NOTIFICATION.

No. 35.—*The 3rd May 1877.*—Under the provisions of Rule VIII. of the rules published in notification No. 50, dated the 30th March 1876, the Chief Commissioner is pleased to declare that, with the exception of Rule V., the rules published in notification No. 1, dated the 1st January 1876, and those published in notifications Nos. 33 and 34, dated the 18th March 1876, are, with the alterations noted below, applicable to the forests specified in notification No. 49, dated the 30th March 1876 :—

In Rule II. of notification No. 34, dated the 18th March 1876, paragraph 4, *for* "revenue to be levied," *read* "payment to be made;" and *for* "duty," *read* "payment at the prescribed rates;" and in paragraph 6, *for* "all revenue," *read* "all sums."

APPENDIX C.

REVENUE DEPARTMENT.

NOTIFICATION.

No. 50.—*The 30th March 1876.*—The following rules for the management and preservation of the forest specified in the foregoing notification having been made by the Chief Commissioner in exercise of the power conferred by section 3 of Act VII. of 1865, and confirmed by the Governor-General in Council, are hereby published under section 6 of this Act:—

PART I.—*Of Reserved Forests.*

I.—Reserved forests are such forests as the Chief Commissioner may from time to time declare to be reserved in the manner hereinafter provided. The Conservator of Forests and his subordinates shall have entire administration, custody, and control over the reserved forests and their products.

II.—No forest shall be declared to be reserved until its boundaries have been clearly marked off by substantial marks at all points where no natural boundaries exist: should villages be included within the forest, the boundaries of the village lands must be demarcated in the same manner as the external boundaries of the forest.

III.—No forest shall be declared to be reserved until a statement has been prepared and approved of by the Chief Commissioner, showing the privileges which villagers are to be allowed to enjoy, and any customary rights which may belong to them in the matter of providing themselves with firewood, with wood and bamboos for domestic and farming purposes, with leaves for manure, *et cetera.* It shall not be competent to the Conservator in any way to restrict or modify privileges recorded in such statement, except with the approval of the Chief Commissioner.

IV.—When the boundaries of a forest have been demarcated as required by Rule II., and the statement of rights and privileges required by Rule III. has been prepared, the Chief Commissioner may, by a notification in the *British Burma Gazette* specifying the boundaries of such forest, declare it to be reserved.

V.—As soon as a forest has been notified as a reserved forest under Rule IV., a notice shall be published by the Deputy Commissioner in the villages around, mentioning the boundaries of the reserve, warning the villagers against trespass or mischief, and explaining to them the restrictions imposed on them and the rights and privlieges recognized and allowed under Rule III. A copy of this notice shall be sent to the District Forest Officer for information. The Conservator shall give prompt attention and consideration to any complaints which may subsequently be preferred to the effect that the restrictions imposed infringe rights of, or inflict hardship upon, individuals or communities.

VI.—Existing roads or pathways through the reserve shall be deemed to be authorized until they are closed in the manner hereinafter provided. The Conservator of Forests, with the concurrence of the Commissioner of the Division, may close any existing road or pathway through any reserved forests, and assign a new way instead of it, provided that the new way so assigned be a reasonably convenient substitute for the old one. Public notice of the closing of such a road shall be given in the township where the forest is situated.

VII.—Except when any lawful authority has been given by the Conservator of Forests, or any Forest Officer specially authorized by him in that behalf, the following acts are prohibited in a reserved forest:—

(*a*). The cutting of *toungyas* and every other form of cultivation.

(*b*). Setting fire to the grass, dry leaves, or forest, or kindling any fire, without effectually preventing its spread.

(*c*). Burning lime or charcoal.

(*d*). Felling, girdling, cutting or lopping, marking, burning, stripping off bark or leaves, tapping for oil, varnish, gum, or resin, or otherwise injuring any trees, shrubs, or bamboos.

(*e*). Sawing up, converting, burning, marking, defacing or altering marks on timber, and dragging, carting, or otherwise removing timber or bamboos.

(*f*). Cutting and removing grass, collecting and removing leaves, bark, wood-oil, resin, gum, lac, fruits, honey, wax, or any kind of forest produce.

(*g*). Entering or passing through any portion of the forest, except on authorized roads and paths.

(*h*). Grazing cattle.

PART II.—*Of Open Forests.*

VIII.—Open forests are such forests as may not, by notification under Rule IV., be included in the reserved forests. In these tracts the authority of the Forest Department shall

ordinarily extend only to the protection of teak, catechu, *pynkadoe*, *thingan*, and such other trees as may from time to time be declared by the Chief Commissioner, by notification in the *British Burma Gazette*, to be reserved.

IX.—Within the limits of open forest, no person, unless he has the permission of the Conservator of Forests, or of a Forest Officer authorized by the Conservator in that behalf, may mark, cut, girdle, or fell, or in way injure any tree, or remove, convert, burn, or use any timber of the kinds which are specified in, or may have been reserved under, rules.

X.—No *toungya* shall be made in teak-producing tracts.

XI.—In addition to the reservation of the trees of the kinds which may be notified as reserved under Rule VIII., it shall be competent to the Conservator of Forests, by a proclamation published in such manner as the Chief Commissioner may direct, to prohibit the felling and cutting of any trees of other kinds which have been marked or girdled by his orders, or the using or removing of the timber of such trees.

PART III.—*Miscellaneous.*

XII.—No person shall block up with a view to irrigation, or for any other purpose, or shall throw any *toungya* refuse into any stream flowing from or through a Government forest, whether reserved or open, to which the Chief Commissioner may, by notification in the *British Burma Gazette*, declare this rule applicable.

XIII.—Nothing hereinbefore contained in these rules shall be held to abridge or affect any existing rights of individuals or communities.

XIV.—No person employed in the management or conservancy of the Government forests, or in the levying of the dues or revenue of such forests, shall engage in any employment or office whatsover other than his duties as a public servant, unless expressly permitted to do so in writing by the Chief Commissioner.

PART IV.—*Of the prevention of Offences and of Punishments.*

XV.—It is the duty of the officers and subordinates of the Forest Department, and of all Revenue and Police Officers, to see that these rules are not violated, and should they in any case be infringed to report the same to the nearest Magistrate or Forest Officer in charge of the forest division or sub-division.

XVI.—Any person guilty of an infringement of any of these rules, for which the penalty of confiscation is not provided by Act VII. of 1865, shall be liable to be punished by fine not exceeding Rs. 500, or, in default of payment of such fine, by imprisonment for such term as is mentioned in the 67th section of the Indian Penal Code.

XVII.—Nothing in these rules shall be construed to prevent any person from being prosecuted under any other law for any act or omission which constitutes an offence against these rules, or from being liable under such other law to any higher punishment or penalty than that provided by these rules, provided that no person shall be punished twice for the same offence.

APPENDIX D.

REVENUE DEPARTMENT.

NOTIFICATION.

No. 33.—*The 8th March 1876.*—In supersession of Revenue Department notification No. 1, dated the 1st January 1876, published at page 2, Part II. of the *British Burma Gazette* of the same date, the following amended notification is issued by order of the Chief Commissioner of British Burma, under the provisions of Rule XII. of the rules for the administration of forests in British Burma, dated the 2nd August 1865 :—

1.—Within the Government forests no trees of the kinds undermentioned, if below 12 feet in girth, measured at six feet from the ground, may be felled, cut, tapped, or otherwise used without a permit granted by an officer duly authorised in that behalf, except when they are cut down in clearing ground *bonâ fide* for the purpose of cultivation :—

(1). Thingan.	(7). Engyin.
(2). Thitsee.	(8). Theya.
(3). Koko.	(9). Eng.
(4). Pynkadoe.	(10). Pymmah.
(5). Padouk.	(11). Kanyin.
(6). Anan.	(12). Shah.

The Chief Commissioner reserves to himself the right of modifying this list from time to time, or adding other kinds of trees thereto.

2.—The permit to be granted under clause 1 shall specify—

(1). the maximum number of trees to be felled under it ;
(2). the time for which it holds good ;
(3). the local limits of the forest to which it applies ;
(4). the circumstances under which it may be cancelled, and the effect of cancellation.

Such permit shall not be transferable.

3.—There will be two classes of permits,—free permits and trade permits. Free permits will be granted at the discretion of the officers granting the permit for all timber or other produce which is used for the domestic or agricultural requirements of the inhabitants of villages in the vicinity of the forests, and no payment of any kind shall be levied for timber used, or any forest produce cut or removed, under free permits. Trade permits will be granted for trees felled and timber removed for the purpose of trade and merchandize. For the purchase of all timber cut or removed under trade permits, payments at the following rates shall be made :—

For every tree of Eng and Pymmah the sum of four annas shall be paid before the tree is felled ; and for all timber of Eng and Pymmah the sum of two rupees per ton of 50 cubic feet shall be paid in addition before such timber is permitted to pass any timber stations which may have been notified in the *British Burma Gazette* by the Conservator of Forests.

For every tree of the other kinds specified in clause 1 the sum of eight annas shall be paid before the tree is felled, and for all timber of such kinds the sum of four rupees and eight annas per ton of 50 cubic feet shall be paid in addition before such timber is permitted to pass any timber stations which may have been notified in the *British Burma Gazette* by the Conservator of Forests.

4.—For the extraction of resin, *Thitsee,* or wood-oil, or for the making of cutch and charcoal, payment shall be made under such rules and at such rates as the Chief Commissioner may from time to time direct.

5.—This notification shall be held to apply to all trees of the kinds specified in clause 1, which may be felled, cut, tapped, or otherwise used after the date of the present notification. For the removal of timber trees felled before that date free permits will be granted, and such timber shall not be liable to any payment under this notification, provided it is passed at a timber station before the 1st January 1877, after which date it will be liable to the payments prescribed in clause 3.

6.—Persons committing a breach of the provisions of this notification will be prosecuted under the Forest Rules.

APPENDIX E.

REVENUE DEPARTMENT.

NOTIFICATION.

No. 34.—*The 8th March 1876.*—With reference to the notification No 33, the following rules for the issue of permits, as approved by the Chief Commissioner, and which were published at page 28 of Part II. of the *British Burma Gazette* dated 19th February 1876, are here republished for general information :—

I.—In demarcated State reserves—

The Forest Department has the right to prevent the cutting of any forest produce whatsoever, and can make their own arrangements with regard to the method of sale, the prices to be charged, or the issue of free permits.

II.—In all other forests included within the boundaries of Government forests as defined by the Forest Rules of 1865—

(1). Free permits for the timber specified in the notification will be granted by the Deputy Commissioners or such officers as they may appoint for that purpose, not below the rank of Extra Assistant Commissioner. These permits will be issued in Form No. A., original will be made over to the petitioner, duplicate sent to the Divisional Forest Officer, and triplicate kept in the District Office. The original has to be shown to any Government official at his demand. Forest subordinates discovering cases of felling or extracting protected timber without permit must report the case to the Divisional Officer, who will forward the case to the Civil Officer for disposal. Free permits must be returned after the expiration of the time for which they were granted.

(2). Trade permits are to be issued in Form B. They may be granted either by the District Officer or by the Divisional Forest Officer. The original is to be made over to the permit-holder, duplicate to be sent by the District Officer to the Forest Officer, or *vice versa.* The original permit has to be presented to any Government official on demand. Forest Officers discovering illicit girdling must report the fact to their Divisional Officers, who will inform the District Officer, with whom the prosecution will rest. Original permits must be returned on expiration of the time for which they were granted.

(3). Free trading permits for the removal of timber of the reserved kind felled previously to 1st of January 1876 may be granted either by the District or Divisional Forest Officer in Form C. Original will be made over to permit-holder, duplicate sent by the District Officer to the Forest Officer, or *vice versa,* and triplicate filed in the Office issuing the permit. None of these permits will have force after 1st January 1877.

(4). The revenue to be levied at revenue-stations will be collected by the Forest Department. At these stations free trading permits granted must be registered by the permit-holder, and timber passed under them will be entered against the number specified therein. Timber not covered by a duly registered free permit will be liable to duty.

(5). Permits for the extraction of resin, wood-oil, or *Thitsee,* or the making of cutch and charcoal, will be granted by the Deputy Commissioner, either at rates to be fixed at their discretion, or they may sell annual permits for the monopoly of the extraction of such products within well defined areas by public auction. Persons extracting such produce illicitly must be reported by the Forest Officers; but the prosecution rests with the district authorities.

(6). All revenue collected under these heads by the District Officers has to be credited to Forests, and a monthly abstract of the revenue must be forwarded to the Office of Conservator of Forests.

A.

Triplicate.	Duplicate.	Original.
Free permit for timber of reserved kinds. Name ... ... Residence ... ... District ... ... Purpose for which required ... ... Kind of trees ... . Number of trees ... ... Forest ... ... Time for which permit is granted ... ... (Date.) (Signature.)	The same.	The same.

B.

Triplicate.	Duplicate.	Original.
Trade permit for timber of reserved kinds.		
Name		
Residence		
District		
Kind of trees		
Number of trees		
Forest		
Time for which permit is granted		
Payments made		
(Date.) (Signature.)		

C.

Triplicate.	Duplicate.	Original.
Free trading permits.		
Name		
Residence		
District		
Kind of timber		
Number of logs		
Forest		
Expiring 1st January 1877		
(Date.) (Signature.)		

D.

Triplicate.	Duplicate.	Original.
Permit for extraction of minor forest produce.		
Name		
Residence		
District		
Kind of produce		
Amount of produce		
Forest		
Payments made		
(Date.) (Signature.)		

APPENDIX F.

PROPOSED NOTIFICATION.

RESERVED TREES.

UNDER the provisions of section 12 of the Forest Rules of 1865, it is prohibited, except for *bonâ fide* cultivation within the unreserved forests declared Government Forests under the forest Rules of 1865, to fell, cut, tap, or in any way make use of trees of the undermentioned kinds below 18 feet in girth, measured at six feet from the ground:—

Hopea (all species)	Thingan. Thinkado. Kounghmoo. Toungsagan.
Xylia dolabriformis	Pynkado.
Pterocarpus dalbergoides	Padouk.
Pentacme Siamensis	Engyin.
Shorea obtusa	Theya.
Dipterocarpus tuberculatus	Eng.
" *alatus*	Kanyin.
Lagerstrœmia (all species)	Pymma. Laiza.
Fragræa fragrans	Anan.
Acacia catechu	Sha.
Melanorrhœa usitata	Thitsee.
Eugenia (all species)	Thabyeh.
Terminalia (several species)	Htoukgyan.
Gmelina arborea	Yemenay.

The Chief Commissioner reserves to himself the right of, from time to time, modifying or adding to this list.*

2. Within the unreserved forests declared Government forests in notification No. 49, dated 30th March 1876, the following trees are declared reserved, and may not be felled, cut, tapped, or in any way made use of, except for purposes of cultivation :—

Hopea (all species)	Thingan. Thinkado. Kounghmoo. Toungsagan.
Xylia dolabriformis	Pynkado.
Pterocarpus dalbergoides	Padouk.
Pentacame Siamensis	Engyin.
Shorea obtusa	Theya.
Dipterocarpus tuberculatus	Eng.
" *alatus*	Kanyin.
Lagerstrœmia (all species)	Pymma. Laiza.
Fragræa fragrans	Anan.
Acacia catechu	Sha.
Melanorrhœa usitata	Thitsee.
Eugenia (all species)	Thabyeh.
Terminalia (several species)	Htoukgyan.
Gmelina arborea	Yemenay.

The Chief Commissioner reserves to himself the right of, from time to time, modifying or adding to this list.*

3. Permits for the felling and extraction of the species enumerated in the foregoing paragraphs will be granted by an officer duly authorized on that behalf There will be two classes of permits—

A. or free permits.
B. or trade permits.

4. A. or free permits will be issued by Deputy Commissioners and such District or Forest Officers as they may depute not below the rank of Extra Assistant Commissioner or Sub-Assistant Conservator of Forests.

* Koko does not require special reservation, as it is only used for agricultural and domestic purposes.
Thabyeh, Htoukgyan, and Yemenay are traded in to a considerable extent in some divisions, and have consequently been included in the proposed new list of reserved trees.

They shall specify the—

1.—Name of permit-holder.
2.—Residence of permit-holder.
3.—District.
4.—Purpose for which it is granted.
5.—Species of tree.
6.—Number of trees.
7.—Forest in which granted.
8.—Time for which permit is granted.

[Not transferable.]

5. Free permits for timber will be granted for agricultural or domestic requirements only on condition that these permits shall not be made use of to fell or extract any tree growing at a distance of more than three miles from the residence of the permit-holder.

6. Free permits may be granted for the building of bridges, rest-houses, and other works of public utility, the construction of which is paid for by private individuals or from local funds; but they must not be granted for the building of *khyoungs*, *tays*, fishery weirs, and works of a similar description.

7. Free permits must be limited to the following species:—

Pynkado.	*Padouk.*
Pymma.	*Sha.*
Eng.	*Yemenay.*
Engyin.	*Htoukgyan.*
Theya.	*Thabyeh.*

8. Timber extracted under a free permit must not be sold or bartered.

There will be no necessity to arrange for the marking of timber extracted under a free permit, as such timber will in no case be more than three miles distant from the permit-holder's residence.

9. Free permits will be issued in Form A.,—the original to petitioner, the duplicate to the Divisional Forest Officer, and the triplicate kept in the District Office. The original has to be shown to any Government official at his demand.

10. Free permits must be returned, within a fortnight of the expiry of the time for which they were granted, to the Thoogyee of the circle for submission to the Deputy Commissioner.

11. B. or trade permits for reserved trees will be only granted by, and at the discretion of, a Forest Officer.*

12. Applicants for trade permits shall state by what route, and in what way, they wish to bring the timber applied for into the market; whereupon the Forest Officer may, at discretion, take payment in either of the following ways:—

(*a.*) For every tree of Pymma, Eng, Htoukgyan, Yemenay, or Thabyeh, the sum of four annas shall be paid before the tree is felled; and for all timber of these kinds, the sum of Rs. 2 per ton of 50 cubic feet shall be paid in addition before such timber is permitted to pass any timber-station or, as the case may be, before it leaves the forest. For every tree of the other kinds specified in paragraphs 1 and 2, the sum of eight annas shall be paid before the tree is felled; and for all timber of such kinds, the sum of four rupees and eight annas per ton of 50 cubic feet shall be paid in addition before such timber is permitted to pass any timber-station, or as the case may be, before it leaves the forest.

(*b.*) It shall be within the power of Divisional Officers to sell standing trees at a reduction on the estimated amount of tonnage and felling-rate that would be leviable were the timberbrought to a revenue-station. The officer, in adjudging the amount

* Paragraph 38 of the new Forest Bill provides for a duty on all timber, the produce of forests situated in British Burma, or brought from forests beyond. The present notification does not pretend to levy a duty, but to fix a price at which Government is willing to dispose of these valuable trees wherever they can be spared.

of reduction, should take into consideration the cost and risk of extraction, as well as the local value and distance from market. The total value has to be paid at the time of granting the permit, and the reduction should not be less than 30 per cent.

13. In the first case (*a*), the timber will be marked against delivery of the permit and payment of the price, either at the revenue-station, or before it leaves the forest.

In the second case (*b*), the outturn from the trees will be marked within the forest against delivery of the permit.

14. Trade permits shall be issued in Form B. in duplicate, the original to be given to the applicant, and the duplicate to remain in the Forest Office.

They must specify—

1.—Name of applicant.
2.—Residence.
3.—District.
4.—Species of tree.
5.—Number of trees.
6.—Forest.
7.—Time for which permit is granted.
8.—Amount and manner of payment.

[Such permit is transferable, but must be returned to the Forest Office within 14 days after expiration.]

15. Timber of the reserved species, which has not been paid for, but is covered by a permit, can only be sold together with the permit.

Should the permit-holder, however, dispose of a portion only, he must give intimation of the transaction to the nearest forest subordinate.

16. Timber of the reserved species, once marked, can be sold or utilized without restriction.

17. Timber of the reserved species, neither marked nor covered by a correct permit (trade or free), or a frontier pass, shall be regarded as the property of Government, and may be sold by the Divisional Forest Officer's orders.

Nothing in this section shall prevent prosecution for theft, if the timber was extracted with the intention to defraud Government.

18. All timber of the reserved kinds, which on the expiry of the permit has not been paid for, shall lapse to Government, and may be resold by the local Forest Officer.

The local Forest Officer may however, at his discretion, grant an extension of the permit.*

19. Timber of the reserved kinds on land granted for permanent or *toungya* cultivation will be free to the cultivator for agricultural and domestic purposes without a permit.

20. Trade permits given by District Officers previous to the issue of this notification will remain in force to date of expiration.

CUTCH.

1. The *Acacia catechu*-producing districts shall be divided into a number of circles with natural boundaries, one-half of which will be opened for cutch-boiling for a period of five years; the other half will, during this period, be strictly closed against cutch manufacturers.†

At the expiration of five years, the portion that has been worked will be closed for a similar length of time in order to aid reproduction, and the closed portion will be thrown open to the cutch boilers.

2. Cutch trees used for the manufacture of cutch are exempted from the provisions of paragraph 12.

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* Mr. A. O. Brown advocates a fee on renewal of permit, and objects to confiscation and the renewal being left to the discretion of the Forest Officer.

† Mr. Oliver makes an objection to this, asserting that many trees [killed by *toungya* cultivation in the closed portion], which are now utilized, would be wasted.

3. The price of the trees will be levied in the following way :—

(*a.*) The Deputy Commissioner may either issue permits for the manufacture of cutch, charging a fee of Rs. 12 per iron cauldron employed in the manufacture;

(*b.*) Or he may sell by public auction the right to extract cutch within any one circle, the number of cauldrons to be employed being previously fixed.

4. The permits shall specify—

1.—Name of applicant.
2.—Residence.
3.—District.
4.—Name or number of cutch circle.
5.—Number of cauldrons.
6.—Payments.
7.—Time of expiration.

They shall be issued in triplicate, the original being given to the applicant, the duplicate sent to the Forest Officer, and the triplicate remaining with the Deputy Commissioner.

5. Cutch-boilers boiling without a permit in any forest or, even with a permit, inside a closed circle, shall be liable to prosecution in addition to the confiscation of their plant and stock on hand.

Minor Forest Produce.

1. For the extraction of wood-oil and thitsee, the district producing the trees from which these products are obtained shall be divided into circles with natural boundaries, which shall be closed and opened in alternate years.

2. No Kanyin trees under seven feet six inches in circumference, at a height of six feet from the ground, shall be tapped.

No Eng trees below three feet, at a height of six feet from the ground, shall be tapped, and no Thitsee trees below two-and-a-half feet.

Kanyin trees from seven feet six inches to nine feet in girth shall not be tapped in more than one place; from nine feet to 10 feet six inches in more than two places; from 10 feet six inches upwards in not more than three places.

Eng and Thitsee trees shall not be tapped in more than two places.

3. The right of extracting oil in the open circles, subject to the foregoing conditions, shall be sold by auction yearly, in October, by the Deputy Commissioner or any officer authorised by him not below the rank of Extra Assistant Commissioner or Sub-Assistant Conservator of Forests.

4. Annual permits for the extraction of resins will be granted by the Deputy Commissioner, or by any officer he may depute, to applicants on the payment of Rs. 2 per man employed in the extraction.

These permits shall not be transferable.

Any person or persons detected collecting resins without a permit shall pay four times the original cost of a permit.